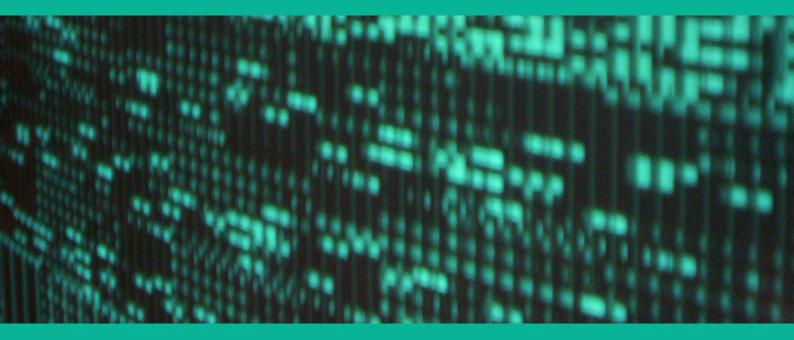# Tech Giants and Civic Power

Martin Moore

With a foreword by Emily Bell

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Centre for the study of
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The Policy Institute at King's

About the Author

Martin Moore is director of the Centre for the Study of Media Communication and Power in the Policy Institute at King's College London. He has twenty years experience working across the UK media, in the commercial sector, the third sector and in academia. Prior to King's he was founding director of the Media Standards Trust.

About the Centre for the Study of Media, Communication and Power

The Centre for the Study of Media, Communication and Power explores how news provision, political communication, public discourse, civic engagement and media power are changing in the digital age. It does this through rigorous empirical research, and communication of the findings of this research to inform relevant academic and public policy debates and civic society responses, in order to help promote diversity, fairness, transparency and accountability in media and communication.

The Centre is based in the Policy Institute at King's College London and is advised by a range of senior figures from the media and civil society.

The Centre has developed from the foundations of the Media Standards Trust, an independent think tank that has been conducting research on issues of media and public policy since 2006 and was based at King's College London from 2013 to 2015.

Foreword

Addressing a group of innovators in Berlin in 2014, Google's executive chairman Eric Schmidt used his speech to take an oblique swipe at the European competition authorities, '...someone, somewhere in a garage is gunning for us,' said Schmidt, 'I know, because not long ago we were in that garage'. By invoking the idea that invention comes from the unexpected and that barriers to entry have disappeared in a digital world, Schmidt repeated a familiar mantra within the technology world, that nothing is for ever and everything is easily challenged by the market.

In this prescient and important paper *Tech Giants and Civic Power* Dr Martin Moore carefully dismantles the thesis that the market will be a corrective to the extraordinary concentration of both economic power and civic influence within a small number of technology behemoths. Furthermore he does what few scholars or politicians have managed thus far, and advances the proposition that we ought to think about new mechanisms of oversight and regulation for a new type of power.

In the past twenty years the proliferation of internet technologies has radically transformed almost every aspect of life; how we buy products, discuss politics, form relationships and conduct our work. At the heart of this change sit a small number of companies who grasped the early possibilities of a widely available internet and turned them into vast generators of wealth and insight. Google, Apple, Facebook and Amazon between them control and collect unprecedented amounts of data about human activity and turn it into products and services that have fuelled stunning commercial growth.

Unlike previous great corporate entities their power resides in the databases of human activity which provide the internal engine for dynamic growth. Google can use image and sensing data, predictive analytics and mapping software to put driverless cars on the roads. Facebook is able to analyse and predict sentiment through the way people communicate with each other, Amazon knows what you might want to buy next before you know it yourself. Apple, through its smartphone technologies and payment mechanisms, knows how and when you communicate with your mother, your bank and your boss. Collectively these companies also make decisions for us, such as what news stories we see first in the morning, which services are recommended to us first, how our histories and foibles will be shown to the world. Which information will circulate freely and which will be stopped.

Martin Moore deftly demonstrates how the civic value of these communications and search platforms is enmeshed within their business models. Unpicking these 'network effects' to enable more effective commercial competition is not a straightforward proposition, not least because politicians and lawyers themselves often don't understand the nature or possibilities of the new power themselves. Martin Moore's manifesto for understanding is timely and clear, as he writes:

> '... it is necessary and urgent that democratic societies better understand this power. Otherwise there is a risk that it is not used constructively or responsibly, that citizens do not have adequate protection from the use or misuse of this power, or that democratic governments respond to this power in ways that are regressive or even harmful to citizens.'

Everyone should read *Tech Giants and Civic Power*, both to understand the issues, and also to engage in the conversation we must have about the solutions.

Emily Bell
Director of the Tow Centre for Digital Journalism at Columbia University

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Preface

This study is about the new and growing phenomenon of global tech giants, their increasing civic power, and what this means for democracies. It might best be described as an essay, in the sense of an extended argument and a series of observations and provocations. It aims to open debate about the role of the tech giants – notably Google, Facebook, Apple and others – in democracy and civic life, as distinct from their impact on privacy and security, or their economic and financial status.

The study presents a new conceptual framework for considering their role, based on the democratic functions they are starting to perform and in the light of their increasing dominance. It ends on the knotty question of how democratic societies should respond. Given the relative failure of most responses to date, coupled with the speed of change, it suggests that this question is fast becoming urgent. A detailed exploration of existing and potential responses is, however, beyond the bounds of this short paper. That is for a future study.

My hope is that the ideas introduced here, and the questions asked, will stimulate responses and generate a wider discussion. Such a discussion is, I believe, much needed and overdue. The thoughts and views expressed are mine alone.

1 | Responding to digital dominance

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The size and dominance of the new tech giants raise critical civic questions for democratic societies – questions we cannot yet adequately answer.

On 2 July 1890 the Sherman Antitrust Act was passed in the US, making illegal – for the first time in US history – monopolistic business practices. The Act remains the basis of US antitrust legislation over 125 years later. It also formed the foundation of subsequent antitrust legislation in Europe.[1]

The Act passed through the House of Representatives by 242 votes for to none against, and through the Senate by 52 votes to 1. It passed, in other words, almost unanimously. In the 51st Congress, first session:

> 'Not a single voice spoke up either in favor of, or expressing any neutrality toward trusts, although some members of Congress urged caution, particularly in reference to the constitutional right to act. The greatest vehemence was expressed by representatives from the Mid-West. There was no question as to the need for legislation: the problem was what form it should take.'[2]

Yet, only three years previously antitrust was neither a political nor a public issue. There was almost no discussion of Trusts in either Congress or Senate prior to 1887, and little coverage across newspapers, magazines or in newspapers, magazines or pamphlets. This despite the fact that there had been six major industry consolidations between 1860 and 1887.[3]

Within the space of three years, concern about the consolidation of industry into large Trusts had emerged from almost nowhere as a political issue to grow into a surge of political and popular support in favour of fundamental reform. This happened in an era long before broadcast radio or television, and a century before the invention of the World Wide Web. Public fear of large unaccountable corporate power was such that both right and left on the political spectrum came together (Senator John Sherman was himself a Republican) to agree legal reforms.

The Sherman Act was then strengthened by the Clayton Act of 1914. 'Together with the Sherman Act,' Andrea Wigger writes, 'they constitute the 'Magna Carta' of free enterprise'.[4] To this day the Trusts are infamous in US political and economic history and have helped frame American attitudes to monopoly, competition and corporate power.

Some of the Silicon Valley corporations of the 21st century are, in many ways, bigger and more dominant than the Trusts of the late nineteenth. They are amongst the most valuable companies in the world. Their revenues – even in real terms – dwarf those of their nineteenth counterparts. In certain markets, like general search, they hold close to monopoly market share.

The questions these tech giants raise are also more complex since they go far beyond the economic. Whilst there are major questions about their economic power, about their liability for tax, and about the nature of digital monopolies, they also raise fundamental questions about security and privacy. Yet amongst the most complex and

least considered questions they raise are about their civic role, in other words, their contribution to citizens' ability to play a full and free role in the societies in which they live. Almost accidentally, these global tech giants have taken on civic roles, and with these roles, civic power. This includes the power to enable collective action, the power to communicate news, and the power to influence people's vote.

It is this civic power that this study focuses on. The study identifies six civic powers that these transnational information intermediaries have acquired. It describes the many positive ways in which these powers have been used to the benefit of democratic society. It also outlines the ways in which the powers these organisations have acquired may be abused, and the danger of democratic societies relying so heavily on a small number of private commercial companies to perform these public purposes.

The growing civic status of these organisations would be less of an issue were it not for their size and reach. By 2015 more than half the online global population of three billion people were using one or more of these services (1.5 billion using Facebook alone). At the same time the growth in their use continued at a dizzying pace.

Their scale and dominance makes it inevitable that, as they take on civic functions, democratic governments will respond – particularly through legislation and regulation. Some of these responses will have a critical and long-term impact – as the Sherman Act of 1890 did. The responses themselves could happen quickly yet their repercussions may take many decades to play out, as happened with antitrust.[5]

It is vital that these responses, particularly by democratic societies and the organisations themselves, are better considered and better informed than they have been to date. Yet for them to be better considered and informed will require much greater thought and effort than we have seen so far.

The central thesis of this study is split into two parts. The first part lays out the scale, reach and dominance of the major information intermediaries by late 2015, and sets this in the context of their ambitions and aspirations. The second examines the civic roles these tech giants are now playing, and the power they now have in the civic realm.

The aim of the study is threefold. It is intended to identify the civic powers that these organisations and their services are acquiring. It is to encourage the corporations themselves to recognize the powers they now have and devise better ways to use them responsibly. And, by identifying some of the potential dangers of digital dominance, it is to help start to inform the inevitable government responses to these organisations – responses that will have repercussions far beyond the organisations themselves, and could be instrumental in the structure of future digital societies.

The study then concludes with a plea for democratic publics and their governments to take the civic power of these giants more seriously, and to put more effort into considering how to respond to the questions they raise.

Who are the 'tech giants'?

There is considerable confusion as to what constitutes a 'tech giant' beyond simply their size and their focus on technology.

Some have attempted to create a new industry category of 'online intermediaries' or 'online platforms'. The European Commission used these two terms interchangeably in a consultation it started in 2015, explaining the definition as meaning: 'internet search engines, social media, knowledge and video sharing websites, news aggregators, app stores and payment systems.'[6] The UK House of Lords also launched an inquiry into 'online platforms' in autumn 2015, though it described this as including everything from 'marketplaces such as Amazon and eBay, to sharing economy platforms such as Airbnb and Uber, to social media platforms such as Facebook and Twitter.'[7] In both cases the term is extremely broad and does not account for size.

Neither has academic terminology settled on a definition. Barzilai-Nahon's 'Network Gatekeeper Theory' introduced a new concept of internet gatekeepers controlling information, and the manner of that control.[8] Much of the subsequent work on defining these and other internet services has been from a legal perspective, for example to identify liability. This was Emily Laidlaw's focus in 2010. Laidlaw distinguished between 'Internet gatekeepers, which are those gatekeepers that control the flow of information, and I[nternet] I[nformation]G[atekeeper]s, which as a result of this control, impact participation and deliberation in democratic culture'.[9] This allows one to separate the Internet Service Providers, which simply provide access, from the Internet Information Gatekeepers, who structure, filter, prioritise and support the communication of information.

More recently the term 'digital intermediary' has been used to define organisations like Google/Alphabet, Facebook, and Apple.[10] Some policy-makers have also chosen to bypass industry definitions entirely and simply use the acronym GAFA for Google, Apple, Facebook and Amazon.[11]

This study prefers the term 'information intermediary', as used by Natali Helberger, since it distinguishes those that communicate information and knowledge – such as Google and Twitter – from those that provide an intermediating digital service where previously there were analog ones – such as Uber and AirBNB.[12] This report does not focus on those who have indirect structural influence, such as Internet Service Providers.

None of the terms used to date are entirely sufficient. This is because the differences between these organisations and their services outnumber their similarities. Therefore though the study will refer to 'information intermediaries' it will also use terms like 'tech giant'. These are intended as descriptors and are not used pejoratively. As will be shown in this study, it is indeed the size of these organisations, and their focus on technology, that distinguishes them from other organisations and industries.

In October 2015 Google created a parent company, Alphabet, to oversee its growing number of different companies and services. This study tends to use the names of the individual companies within Alphabet such as Google, YouTube, and Android or will refer to Alphabet/Google, since the new name is still relatively unfamiliar to many.

2 | How big are they?

2 | How big are they?

In 1888 the American journalist and author Edward Bellamy wrote a book called *Looking Backward: 2000-1887*. This bestselling novel predicted that the consolidation of industry would continue until eventually, by the year 2000, society would be transformed into one great organization. The book, intended as a utopian vision, was published as the phenomenon of the US Trusts was starting to generate public and political alarm.

Bellamy may have been a few years awry when it comes to the digital world, and it may be a handful of companies rather than one, but as predictions go, Bellamy's was more accurate than most.

The top three most valuable brands in the world in 2015, according to the Forbes ranking, were Apple, Microsoft and Google.[13] Facebook was tenth, Amazon thirteenth. The scale and reach of these companies is now calculated in billions of people rather than millions, and many of us are dependent upon their services, whether we choose to be or not.

In 2013 a dystopian novel, *The Circle* written by Dave Eggers, described an Orwellian world dominated by a 'Google-like, Facebook-like tech behemoth'.[14] Unlike Bellamy's novel, Eggers' is based in the near – not the distant – future.

Finding the numbers

Discovering the scale, reach and activities of these tech companies is not an entirely straightforward exercise. There are three main reasons for this. The first is that the companies themselves, while being transparent about certain information, keep many details private. One can learn, for example, about the Halloween costumes that are trending by US location based on search data at Google Frightgeist, but not how many searches are done each day on the search engine. The second reason is that most industry measurements tools are commercial and, though they provide some data publicly, keep much of it for their clients. The third reason is that the companies' activities change so frequently, and their users rise – and occasionally fall – so fast, that establishing firm figures is like playing Whac-A-Mole.

All the major tech companies – Google, Facebook, Apple, Microsoft, Amazon, Twitter, LinkedIn – are listed and therefore required to make certain information public. Most choose not to release much corporate information beyond this. Google, for example, 'is notorious for not regularly sharing' figures such as number of searches, according to Danny Sullivan of Search Engine Land.[15] Facebook is even less open with its usage data, though it commissions research, some of which it releases.

Digging through the various communications of the companies themselves does, however, provide a good deal of information. Mark Zuckerberg publishes facts and figures on his Facebook page, as do some of his colleagues like WhatsApp's Jan Koum. Google has an official blog, and there are blogs on other Alphabet services (Alphabet itself did not have its own blog in 2015). Twitter provides basic information on its site, and tweets company news.

For usage statistics one can use commercial companies that base their figures on large national and global samples. Comscore collects usage through its sample of users in 172 countries worldwide (comscore.com). Statista, a fast-growing Hamburg-based organisation, collects data on over 80,000 topics from over 18,000 sources, and had 600,000 registered users in 2015 (according to statista.com). Though they make some data publicly available, however, much of it is only available to clients. This study uses publicly available information from these and other sources.

Tech industry news sites have mushroomed in the last decade. Those reporting regularly on the activities of the tech companies include Vox Media owned Re/Code and The Verge, plus TechCrunch, TheNextWeb, Search Engine Land, Business Insider, VentureBeat, and Quartz. Although these do not focus exclusively on the major players, these take up a good deal of their attention.

Although there is a growing body of academic research on the uses of these digital services – particularly ones like Twitter – there is little academic research on the scale and size of these organisations. This is not surprising. These organisations are young and are changing so fast that they elude lengthy academic time frames. This may change as the companies age.

Whatever figures one uses will, inevitably, be out of date as soon as they are put down on paper. As is set out in this study, the speed of growth of some of these services is difficult to comprehend. From August 2014 to September 2015 WhatsApp added more users than the populations of Germany, France, Italy and the UK combined (growing by 300 million – Statista, 2015). Any assessment of size necessarily therefore has to be a snapshot. This study is a snapshot taken in 2015, just over twenty-five years after the invention of the world wide web.

The risk of taking such a snapshot is that, by the time it is read, circumstances may have changed substantially. All the organisations in this report will have grown or shrunk. A new digital organisation could have risen to global prominence. Yet, unless the structure of the digital world has changed fundamentally, there will still be a handful of tech giants providing services for a large proportion of the world's citizens, and the dilemmas described here will remain the same.

Scale and Reach

By the end of 2015 there were just over three billion people in the world who use the internet.[16] 1.49 billion, or almost half of them were active Facebook users in 2015.[17] Facebook had almost as many active users as there are Muslims in the world.[18] This despite Facebook being banned in China and disrupted in numerous other countries. On a single Monday in August 2015, Facebook reported that, for the first time, over a billion people used its service.[19]

These figures do not account for Facebook's other services. WhatsApp, the messaging service it bought for $19 billion in 2014, had more than 900 million active users in September 2015.[20] In India alone WhatsApp was used by almost fifty million people in 2014.[21] Facebook Messenger, a similar messaging service to WhatsApp, and available separately from Facebook, had 700 million users globally by mid-2015.[22] Instagram, the photo sharing website had 400 million monthly users by September 2015.[23]

1.2 billion people regularly use Google to search for information.[24] These 1.2 billion people make, on average, about three billion searches a day, over 100 billion searches a month.[25] [26] Alphabet's video platform, YouTube, is similarly popular. In 2013 it exceeded over 1 billion users each month, from its inception in 2005.[27] In this brief ten-year history its users have uploaded more than 135 million 'how-to' videos and 10 million cat videos.[28] Android, Alphabet's mobile phone operating platform, boasts over one billion users worldwide, as well as 4,000 unique Android devices available to buy.[29]

800 million people have an Apple iTunes account; greater than the total population of Europe.[30] In the first quarter of 2015 Apple was selling over 550 iPhones each minute, as compared to about 256 babies born in the world each minute.[31] [32]

244 million people have bought something from Amazon in the last twelve months.[33] Amazon has over eight times as many books in stock than the uppermost estimates of the total number of scrolls in the great library of Alexandria at its peak (3.4 million books vs 400,000 scrolls).

500 million tweets are published each day, by Twitter's 320 million active Twitter users.[34] 'About a billion' people were registered on Twitter in 2013.[35] LinkedIn grew from under a hundred million users in 2010 to just under 400 million in 2015.[36]

Even in a world in which we are daily bombarded with big numbers, these are of an entirely different magnitude to those associated with most commercial organisations.

Hard to Avoid

Few people with an internet connection outside China can now get through each day without using the products and services of these global US technology companies. If someone has not used Google search, or Apple iTunes, or bought something from Amazon, there is still a good chance they will have used Google's Android operating system or Apple's iOS on their mobile search. Or if they went on the web at all it is likely they will have done it with the help of Chrome (Google/Alphabet), or

Safari (Apple). Or perhaps they sent an email via gmail (Google/Alphabet), Hotmail (Microsoft), or icloud (Apple). Or an instant message via WhatsApp (Facebook), or Facebook Messenger (Facebook). Or posted a photograph on Instagram (Facebook). Or viewed a video on YouTube (Google/Alphabet). Or chatted to a family member across the globe using Skype (Microsoft).

In Norway over three-quarters of internet users are active Facebook users, or just over 60 per cent of the total population of Norway.[37] In Brazil Google has a 97 per cent share of search.[38] Skype accounted for 40 per cent of the entire conventional international telecom market in 2014.[39]

Even those who consciously try to avoid using these services find it increasingly hard. A person may keep a private email account, but as soon as they engage with someone with a free account such as gmail, the contents of that exchange will be held by the corporation.[40] Since 2014 Facebook has tracked the web movements of its users even when they are outside its network.[41] 'Like' buttons track your movements online, as do Facebook's 'conversion pixels', invisible text within a webpage.[42] In 2012 it had 'more than 200 "trackers" watching our internet activity'.[43] The Facebook phone app monitors the location of your phone.[44] Apple also tracks your movements via your iPhone, though says the information only ever remains on the hardware.[45] In both cases you can disable the tracking.

Google collects data from you (your name, email address, telephone number, credit card), from your search history, your gmail, your voice search, your use of YouTube, Chrome, and information from Google+ and Android. Google can also track your movements via your phone.[46] [47] From 2012 it combined about 70 privacy policies so it could analyse the aggregate data.[48] Google's Android operating system was used by eight of the ten smart phones sold internationally in 2014, and is now being integrated to smart homes and cars, according to Google's Sundar Pichai.[49]

Julia Angwin, a journalist at ProPublica, detailed her attempts to hide her digital trail in her 2014 book *Dragnet Nation*. Despite lengthy and exhausting efforts she eventually found she was unable to become digitally invisible without entirely disengaging from the modern world.[50] As the chief executive of Google, Larry Page, accurately pointed out, 'We build products you can't live without'.[51]

These global technology giants now bestride our world like Colossi. We wake to their alarms. We sleep to the continual ping of messages arriving on their hardware and via their software. They have become integral to our communication, to our access to news and information, to our virtual identities.

In *Data and Goliath*, Bruce Schneier writes that each of us is now forced to 'pledge our allegiance' to one or other of these 'feudal lords' – Google, Apple, Microsoft, Facebook – and even if we want to remain independent 'it's becoming increasingly difficult to avoid pledging allegiance to at least one of them'.[52]

Nor is it just individual reliance. Public authorities are using these tools for public purposes. The town of Jun, in Spain, started using Twitter from 2011 as the 'principal

medium for citizen-government communication'.[53] This included not only tweeting public information and publicizing events, but also for police alerts and dialogue with the mayor's office. In the UK Cambridgeshire police announced they would be speaking to some victims of crime via Skype, as part of a trial to make the service more efficient.[54] The British Prime Minister tweeted his shock at the terrorist attacks in France in November 2015.[55]

Reaping the rewards

Our growing reliance on these organisations has helped make them very highly valued. Apple became the first US company to achieve a valuation of over $700 billion in February 2015 (dropping later in the year). In addition to its high profit margins Apple had built up a cash surplus of $178 billion, 'the biggest of any public corporation in the world'.[56] Alphabet's market capitalization reached almost $530 billion by the end of 2015, making it more valuable that the oil giant Exxon Mobile. In 2014 Google (as then was) made $14.4 billion in profit. Microsoft was not that far behind Alphabet at a valuation of over $440 billion at the close of 2015. Facebook was valued at nearly $300 billion by the end of that year.[57]

These technology and media companies are not just large compared to their industry contemporaries, but also compared to the nineteenth century US Trusts at whom the Sherman Act was aimed. When Standard Oil was at its height just after the turn of the twentieth century it was making profits of approximately $65 million a year.[58] This equates to around $1.7 billion in 2015. In 2014 Apple made a profit of over $39 billion, or more than twenty times that of Standard Oil when it attracted the attention of US antitrust legislators.

The wealth of these organisations allows them to invest significant amounts in research and development, as well as acquiring companies that complement or compete with their services. Facebook paid $19 billion for the messaging service WhatsApp in 2014.[59] Google made more than 170 acquisitions between 1998 and 2015, many of which it integrated with its own services – such as YouTube, Adsense, Blogger, Picasa, Analytics.[60]

Extending their reach

Dauda Musa runs a mobile money transfer business in Accra, Ghana, and will, according to Mark Zuckerberg, benefit from Facebook's internet.org.[61] Facebook's chief executive also points to the benefits of internet.org to school children in Chandauli, a small village in northern India[62] and a driver in Manila 'who uses Facebook and the internet to stay in touch with loved ones who moved to Dubai'.[63]

Zuckerberg's refences to non-western countries are unlikely to have been accidental. Facebook was, by late 2015, claiming to provide internet access to millions across the developed world via 'Free Basics' or internet.org. The service, a partnership between Facebook and local telecoms providers launched in August 2013, gives people low cost internet access via their mobile phones. Facebook's aim is to help provide access to the internet to the four billion people who are currently not connected.

In the first half of 2015 Facebook made internet.org available across Tamil Nadu, Maharashtra, Andhra Pradesh, Gujarat, Kerala and Telangana in India, in Indonesia, Bangladesh, Panama, Guatemala, the Philippines, and Ghana. This is in addition to Columbia, Kenya, Tanzania and Zambia.[64] The ambition, Facebook said, was to make internet.org available in 100 countries by the end of 2015.[65] Facebook was able to extend its reach by partnering with local telephone companies like the Reliance network in India, and Airtel in Ghana.

Google and Facebook's ambitions have also led them into the air to help people connect to the internet and their services. Facebook has invested in a solar airplane project. It has built planes wider than Boeing 737s but light enough to glide at 60,000 feet for months on end, which can beam the internet down to groundstations by laser.[66]

Google hatched similar plans, except with balloons rather than planes. Project Loon, like Facebook's unmanned aircraft, aimed to provide internet access for those in remote areas or with poor access to good digital infrastructure (google.com/loon, 2015). The balloons float in the stratosphere, 20km above the earth, controlled by automated algorithms. 'We're getting to the point where we can roll out thousands of balloons' Mike Cassidy, the project lead, said in a Google video in April 2015.[67]

These ventures take the tech giants into new territory as regards national and international law. So new are some of the dilemmas with respect to regulation that Facebook and Google started collaborating to try to change the law to make it easier to use aircraft in the stratosphere to provide internet access.[68]

Barely teenagers

When contemplating the scale and reach of these internet giants it is easy to forget quite how young they are. Google was incorporated on September 7th, 1998.[69] TheFacebook.com (as it was then called), went live on Wednesday February 4th, 2004[70] and was established as a limited liability company in April the same year. The first ever official tweet was posted on March 21st, 2006 – 'just setting up my twttr' posted Jack Dorsey.[71] Amazon.com is, by comparison, mature. Jeff Bezos registered the URL Amazon.com on November 1, 1994.[72] Apple is, relatively speaking, the granddaddy, having been founded in 1976 (though its renaissance is normally linked to the return of Steve Jobs in 1997).

As they have grown they have also changed and continue to change – sprouting new services, adopting new ambitions and assuming new names. Google became Alphabet in October 2015, as a way in which to restructure the multiplying Google businesses beyond search. David Kirkpatrick subtitled later editions of his biography of Facebook, 'the world's fastest growing company'.

Monopolies and Oligopolies

The tech giants are not only young, and big, they hold dominant positions across many digital markets. Google has more than a 90 per cent share of general search in most European countries,[73] a market in which Google has held a dominant position for many years.[74] In the US its market share for general search is lower, at 64 per cent, though this is still considered dominant in European terms.[75] Google's dominance of mobile search in Europe is even greater, at 96 per cent: in the US this stands at 91 per cent.[76] Internationally, 89 per cent of general searches were made using Google in mid-2015.[77]

Android, the mobile phone operating system developed by Google, had also become the dominant system worldwide by 2015. Over 80 per cent of the smartphones sold globally in mid-2015 ran on the Android operating system.[78] When combined with the sale of phones with Apple's iOS mobile operating system together their share adds up to 97 per cent.[79]

In video YouTube had a 56 per cent share of the worldwide 'desktop video viewing' market. Together with Facebook video, with 33 per cent share, the two had 89 per cent of the market.[80] In ebooks, in the UK, Amazon had a 95 per cent share of the e-book market in 2015.[81] Its share was lower in the US, though still dominant, estimated at 65 per cent.[82] In social media, Facebook had, by the end of 2014, a 61 per cent share of social logins, with Google+ on 22 per cent.[83] Five of the top ten most used mobile apps in the US and UK over the course of 2015 were made by Google or Facebook.[84]

Citing three studies in Africa and Asia, Quartz news suggested that, for some internet users at least, Facebook is the internet.[85] Two of the studies were in Indonesia and Africa in 2012 and the third, commissioned by Quartz, was in Nigeria and Indonesia in 2014. All three were, as Quartz acknowledges, of limited scale. Though others have encountered similar confusion between Facebook and the internet. Sheryl Sandberg, Facebook's Chief Operating Office in 2015, told the Wall Street Journal that 'People actually confuse Facebook and the internet in some places'.[86] Vlad Savov, writing in The Verge, argued that Facebook was 'gradually starting to eat the web up' and replacing the open web with a 'Facebook-approved version'.[87]

From this it may seem 'rather obvious that many very successful Internet-based companies are nearly monopolists'.[88] Indeed, observers have asked whether these services should be considered 'essential facilities',[89] 'natural monopolies',[90] or 'common carriers'.[91] Zuckerberg himself, and other founders of Facebook, talked about wanting Facebook to be a 'social utility', according to David Kirkpatrick.[92]

However, assertions that these organisations and their services are monopolies are disputed, not least by those within the companies themselves. 'While Google may be the most used search engine,' Amit Singhal, Senior Vice President at Google Search posted in April 2015, 'people can now find and access information in numerous different ways... In fact, people have more choice than ever before'.[93] To support this claim Singhal argued that there were 'numerous other search engines such as Bing, Yahoo, Quora, DuckDuckGo and a new wave of search assistants like Apple's Siri and Microsoft's Cortana'. In addition to which there were specialised search services (for example within Amazon), and social search (for example via Facebook).

Others have taken issue with the categorisation of these services as essential facilities, natural monopolies or common carriers on the basis that commercially viable competitors are available, online markets change quickly, and their services are not essential to society.[94]

Drawing a line around the market in which they compete is also perilously tricky. Google views eBay, Expedia and Amazon as competitors to its specialised searches.[95] Rather than classify Google as general search, it could be classified as consumer tech, or digital advertising.[96] In both these markets it would have a far smaller market share. Ironically, the larger some of these intermediaries become and the more markets they participate in, the more difficult it will be to call them monopolies.

Even amongst those who accept that these companies are dominant, or in some cases virtual monopolies, there are those who dispute that this is a problem. Indeed Peter Thiel, one of the co-founders of PayPal and Palantir, has argued the opposite, claiming that monopoly can allow a company like Google to be creative, and that competition would distract from this creativity. 'Creative monopolies' Thiel writes, 'aren't just good for the rest of society; they're powerful engines for making it better'.[97]

Are digital monopolies different?

Even should one accept that these organisations are monopolists or oligopolists in certain markets, there is the question of whether they are different from traditional, non-digital monopolies, and should therefore be dealt with differently. There are, for example, at least three ways in which it may be argued digital monopolies are distinct from their analog equivalents: pricing, network effect, and choice.

In 2002 Jean Tirole and Jean-Charles Rochet published a paper whose influence is still being felt. 'Platform Competition in Two-sided Markets' showed why it might be logical for platforms – or intermediaries – to make their services free to the public at the point of use.[98]

Two-sided markets, they wrote, 'often treat one side as a profit center and the other as a loss leader, or, at best, as financially neutral'. A credit card company, for example, needs cardholders and it needs affiliated merchants. It therefore might charge cardholders very little in order to attract more merchants. Similarly, it can be logical for information intermediaries to structure their pricing to subsidise one side of the market in order to incentivize the other. Devising a pricing structure to 'get both sides on board' can therefore make sense.[99] This is indeed what most of the information intermediaries have done. Facebook, Google, Twitter and others do not charge users for their services in order to grow their user base to a size where it becomes more attractive to other users and to advertisers.

Making their services free to the public at the point of use differentiates these organisations from traditional monopolies and may mollify certain traditional concerns about them. Classical economic concerns about monopolies centre on monopolist's ability to control prices. Once in control of the market, the monopoly provider can charge the customer a higher price, and the customer is unable to go elsewhere for a comparable service. 'The price of monopoly' Adam Smith wrote, 'is

upon every occasion the highest which can be got... The price of free competition, on the contrary, is the lowest which can be taken'.[100] Yet, if the dominant provider is not charging anything for the service, it is difficult to argue that the concern still holds or that the provider is misusing its position of dominance.

Google made this argument in response to the European Commission's antitrust charges against it. 'The statement of objections [served by the Commission] fails to take proper account of the fact that search is provided for free' Google wrote, 'A finding of abuse of dominance requires a 'trading relationship' as confirmed by consistent case law. No trading relationship exists between Google and its users'.[101] The lack of a trading relationship also makes it very difficult for a user, or a regulator, to establish the value of the exchange.

Digital monopolies may also differ from traditional monopolies, particularly natural monopolies, with respect to the network effect. Natural monopolies are 'those which are created by circumstances, and not by law', such as water, railways, and fixed line telephones.[102] They generally require initial infrastructural investment, investment that is then offset by the subsequent benefits of the network effect. For users, the network effect means that the service becomes more useful and effective the more people use it.

The information intermediaries are reliant on, and the beneficiaries of, the network effect. Facebook would be a far less useful service if fewer people used it. Yet, in the case of the information intermediaries, the network effect is different to previous network effects – such as the telephone or railways – in terms of its speed and spread of adoption. It took 64 years for the telephone to reach 40 per cent penetration in the US, but only three and a half years for social media to reach 50 per cent.[103] [104] In this sense it might be more appropriate to call it a 'sheer' network effect, given the steepness of its take-up.

The same factors that allow for an upward sheer network effect could, theoretically, work in the opposite direction. In other words, digital intermediaries could decline at a similar speed to that which they grow. This, again, is different than traditional network monopolies whose investment in the infrastructure of the network can act as a barrier to entry for other providers and as a disincentive for people who may want to leave. The cost of building railroads and investing in trains, for example, acts as a barrier to potential competition. By contrast, the infrastructure of the net is already in place. Similarly, there is a cost, to a train user, associated with switching from using train travel to an alternative mode of transport. By comparison, the cost of switching from one online service to another may be much lower.

This leads to a third difference between digital monopolies and traditional ones. Monopolies, it has traditionally been argued, reduce consumer choice. When Henry Ford dominated the US car market in the early twentieth he famously quipped that 'Any customer can have a car painted any colour that he wants so long as it is black'.[105] Yet digital monopolies have been successful partly because they help enable consumer choice. Google search is successful because many people believe it is the most effective way to navigate information and help them filter an over-abundance of choice.

Partly for these three reasons – pricing, network effect, and choice – commentators have seen these tech giants as different from their analog equivalents. '[H]igh market concentration levels cannot simply be interpreted in the same manner as in conventional markets without network effects'.[106] Some also accept that in some of these markets, monopolies or oligopolies may be almost inevitable. 'It is well-known in the literature that an equilibrium can sustain only a small number of such intermediaries and a concentrated market structure is thus expected'.[107] There is also a growing acknowledgment that in certain digital markets, for better or worse, there will be one, or a small number, of dominant providers. As Jaron Lanier and Andrew Keen note, this means that in some digital markets, it is highly likely that 'winner-takes-all'.[108] [109]

This does not, of course, address the personal, the political or the civic questions that are raised by the scale and dominance of these companies and their services, questions that this study seeks partly to address. Nor does it answer the complex economic questions about how the differences between digital and traditional monopolies play out. We do not, for example, know how the collection and use of personal data may give an information intermediary an unfair competitive advantage in other commercial sectors. To what extent does Google or Apple's knowledge of our movements give them an unfair advantage if they decide to develop cars or new transport systems?

Disputes over how we classify the tech giants and how we express their dominance are not just semantic. Were Facebook to be defined as a utility, or Google search a natural monopoly, it would raise immediate public interest questions, and amplify calls for the regulation of these services that these companies are keen to avoid.

If one does conclude that it is appropriate to consider some of these services 'natural monopolies' then that necessarily raises the question of how one ensures that they do not misuse their monopoly power, and how the benefits they gain from their monopoly services (particularly, in this case, in terms of personal data) can be shared such that they do not solely benefit other services offered by the same provider.

Yet whether or not there is consensus about how these organisations be defined, it is clear that, in the last two decades, a handful of US companies have helped to create new digital markets and have come to lead those markets, sometimes as virtual monopolies, sometimes as oligopolies. It is not clear whether they will maintain their lead or their dominance or whether the sheer network effect will, for one or more of them, work in the opposite direction.

However, by 2015, they had consolidated their global positions to such a degree as to make it increasingly difficult for smaller players or new entrants to challenge them. Competition in some of the markets in which they operate may have been 'just a click away' a decade ago, but the barriers to entry for new rivals had become very high indeed.

Customers' expectations of fast download speeds and quick response time is, for example, such that it requires significant data processing power. This in turn means large infrastructural investment in order to be competitive. As an illustration, in 2013

Facebook opened a new data centre in Lulea, Sweden. The centre is 'the size of four football fields' at over 30,000 sq m, houses thousands of servers and has, according to one newspaper, 'a hint of the movie Bladerunner'.[110] It is located within the arctic circle to take advantage of local hydroelectric power and in order to cool the plant naturally. When it opened Lulea, Facebook already had four such centres in the US. The company, like other information intermediaries, did not release the cost of a data centre, but Gigaom estimated upwards of $300 million.[111] This level of infrastructural investment would be prohibitive to all but the largest corporate start-ups or governments. It makes it highly unlikely that the tech giants' dominant positions will be challenged by market mechanisms alone.

This puts these organisations in positions of significant power. This power has also allowed them to dream up ambitions and aspirations that are, in some cases, literally out of this world.

Ambitions and Aspirations

"It's a little like a spaceship" Steve Jobs said in 2011 of Apple's plans for a new, $5bn building in Cupertino. It was one of the last announcements Jobs would make before he died later that year. Yet the futuristic plan for Apple's new offices continued and was set to open in 2016.[112] Designed by Norman Foster's company, the same company that built the new Reichstag in Berlin and the translucent tent in Astana, Kazakhstan, Apple's headquarters was to resemble a huge glass donut. More than a mile all round, it would be filled inside and out with foliage (Apple employed a senior arborist to oversee trees). When asked if Apple might include a museum in its lavish new Cupertino campus, its senior VP of worldwide marketing replied "We are focused on inventing the future, not celebrating the past".[113]

Not to be outdone Google announced, in 2015, plans to build a space-age campus, comprising small villages within huge see-through canopies, that will 'include self-driving cars, solar-powered drones and robots'.[114] *The Guardian* called it 'a pastoral utopia-with-WiFi'.[115]

Facebook too built a new campus in 2014-2015 in Menlo Park, designed by Frank Gehry, the architect behind the Guggenheim Museum in Bilbao. The new office contained the 'the largest open floor plan in the world' that fit 2,800 people, and a 9-acre roof top park with walking trails.[116] The building was designed to reflect the open-ness and transparency of Facebook culture.

Close to the campus Facebook acquired a 200-acre waterside plot with plans to develop a small municipality for Facebook employees. Dubbed 'Zee-town' (after Zuckerberg), Facebook reportedly planned to build apartments, houses, hotels and shops on the space, similar to the industry towns built for steelworkers, stonemasons or factory workers in the nineteenth century (by Andrew Carnegie in MacDonald, Ohio, for example).

Amazon's building plans in 2015 were not quite as ambitious as the other tech giants, but still included large transparent biospheres in downtown Seattle, described in one report as an 'Elysian utopia'.[117] Unlike some of his tech contemporaries, however, Amazon's founder Jeff Bezos was also reported to have plans to colonise space, and succeeded in launching a first test flight in April 2015.[118][119] It is not known if he has any plans for office space on other planets.

These building plans, innovative and ambitious in their own right, reflect the much broader aspirations and ambitions of the companies that commission them. For many years these companies have been described as building the future. Ken Auletta's biography of Google, 'Googled', is subtitled 'The End of the World as We Know It'. In Jeff Jarvis' book – *What Would Google Do?* Google is used as a model for doing everything from publishing to building cars to running governments. Historian Yuval Harari, writing in the New Statesman, went as far as to call the Silicon Valley leaders 'the Lenins of our time', indeed 'when it comes to audacity and scope,' Harari writes 'even Lenin couldn't hold a candle to the silicon prophets'.[120]

Alphabet/Google famously encourages its employees to come up with 'moon-shots' – ideas that are unique and wildly ambitious. It has a semi-secret lab called Google X, from which self-driving cars was developed (run by 'Captain of Moonshots'). It employed the futurist Ray Kurzweil as director of engineering and 'an immortality true-believer' – Bill Maris to invest in ventures to extend life.[121] It has established or bought companies like Calico who are 'tackling aging' (from calicolabs. com), DeepMind who aim to 'Solve Intelligence' (from deepmind.com) and Magic Leap, who claim 'It's time to bring magic back into the world' (from magicleap.com).

We are told we are living through 'the Age of Facebook, Twitter and YouTube'.[122] Yet we are also told we are in 'the age of Amazon',[123] and 'the age of Google'.[124]

Follow the Leaders

It is helpful, when trying to better understand these company's ambitions, to listen to the founders themselves, given how central they are to their company's goals. The way they express these goals is, for the most part, not corporate and commercial, but in terms of a social, even utopian, mission.

'He is, at heart, a passionate utopian' Nicholas Carlson wrote of Google Chief Executive Larry Page in 2014.[125] This is reflected in Page's talks at the annual Google developer events, the Google I/O. 'I think we're all here because we share a deep sense of optimism about the potential of technology to improve people's lives, and the world' Page said at the event in 2013.[126] Page's business partner Sergey Brin is similarly messianic about technology, though more focused (in his public statements at least). "We want Google to be the third half of your brain." Brin said. For him this means using technology to enable an individual to access global intelligence: "Ultimately you want to have the entire world's knowledge connected directly to your mind".[127] "It quickly became apparent that Sergey Brin and Larry Page saw themselves as missionaries", Ken Auletta writes early in his book 'Googled'. [128]

Their executive Chairman, Eric Schmidt, believes that 'Technology-driven change is inevitable', and that issues such as 'citizenship, statecraft, privacy and war' will be 'driven by the rise of global connectivity'. Schmidt, writing with Jared Cohen, is not entirely sanguine about the direction of the world, but is sure its direction is within our control based on how humans 'interact with, implement, adapt to and exploit technologies in their environment'.[129]

"Facebook was not originally created to be a company' Mark Zuckerberg wrote in 2012, 'It was built to accomplish a social mission - to make the world more open and connected'.[130] Achieving this goal is central to Zuckerberg's ambition for Facebook. Connectivity, Zuckerberg has written, is a 'human right',[131] and Facebook, Zuckerberg suggests, can help make that right a reality, not for commercial reasons, but for social ones.

Zuckerberg, Page and other heads of these big Silicon Valley companies, frequently talk about their mission to be a force for good in the world and to change the world for the better. Following the birth of his daughter Zuckerberg even pledged to donate 99 per cent of his shares in Facebook to 'advancing human potential and promoting equality'.[132] In this sense they do not simply want their organisations to be economically successful. They want them to be forces for social and political change as well.

Occasionally they express frustration at laws or regulations which temper their ambitions. At the Google I/O in 2013 Larry Page criticized laws made in a pre-internet era:

> "If you look at the different kinds of laws we make, they're very old. The laws when we went public were 50 years old. A law can't be right if it's 50 years old, like it's before the Internet, that's a pretty major change, in how you may go public."[133]

Page imagined a space where people at organisations like Google could experiment, without legal or regulatory restraints:

> "I think as technologists we should have some safe places where we can try out some new things and figure out what is the effect on society, what's the effect on people, without having to deploy kind of into the normal world."[134]

This frustration with old laws and regulations may help explain the various experiments with drones, balloons and satellites. The tech giants are looking to colonise uncharted spaces. Similarly, the construction of a self-sufficient town – Zee Town – may provide not just homes for workers, but a space free from normal civic constraints and responsibilities. Writing about Facebook's municipal plans Adam Greenfield was struck by ' how clearly it reflects the tech industry's continuing withdrawal from the public realm'.[135]

The aspiration of these companies to withdraw from the public realm, and to find spaces unfettered by legal restraint suggests a limited commitment to civic duty, or at least to civic duty as currently framed. Yet though these companies may want to free themselves of civic constraints, their services now play increasingly important civic roles. The next section sets out these roles, and the power associated with them, and shows why it is inevitable that democratic societies will respond.

3 | Civic power

3 | Civic Power

> 'Modern technology platforms, such as Google, Facebook, Amazon and Apple, are even more powerful than most people realize, and our future world will be profoundly altered by their adoption and successfulness in societies everywhere' Eric Schmidt and Jared Cohen, The New Digital Age (2013) [136]

The Executive Chairman of Alphabet's assertion that the large tech companies will profoundly alter our future world, though expressed in grandiose and deterministic language, justifiably points to their importance beyond the purely economic. When people talk about the power of the tech giants they often focus on their economic power and their dominance of particular markets. Though this is clearly important, to concentrate on it can obscure their significant, and growing, civic power. It is their civic power that distinguishes them from other large transnational corporations and that gives their size, dominance and ambitions such political and social implications.

As Rebecca MacKinnon wrote, these and other internet companies are 'even more powerful because not only do they create and sell products, but they also provide and shape the digital spaces upon which citizens increasingly depend'.[137]

Back in 2007 the academic Bill Dutton spoke about an emergent 'Fifth Estate' made possible by the internet. Ten years on and this Fifth Estate continues to emerge although significant control of, and responsibility for, its emergence has fallen – by default and design – to a handful of tech giants.

Some of the civic power they are gaining is comparable to, indeed is starting to take over from, the power of traditional media organizations. The power, for example, to command public attention, the power to communicate news and information, or the power to give people a voice. Other civic powers are supplementary to, and distinct from, those of traditional media, such as enabling collective action, and the role they play in elections.

The tech companies prefer not to view themselves as powerful, but rather point to how their tools and services empower the public. The 'most significant impact of the spread of communication technologies' Eric Schmidt and Jared Cohen write, 'will be the way in which they help reallocate the concentration of power away from states and institutions and transfer it to individuals'.[138]

Similarly, Mark Zuckerberg talks about how 'It's been amazing to see how all of you [Facebook users] have used our tools to build a real community'. Today, he wrote in 2014, these tools have been used mostly for 'sharing moments' but in the next decade 'they'll also help you answer questions and solve complex problems'. Rather than claim credit or ascribe power to Facebook itself, Zuckerberg thanks his users for allowing him to help them: 'I'm so grateful to be able to help build these tools for you'.[139] For this reason it was perhaps not so surprising that he should have chosen, as his first book club book, Moses Naim's *The End of Power*. Naim argues that power has dissipated from authority and is being divested to the people, particularly through new media tools.[140]

Yet the two are not mutually exclusive. Providing the tools and the platforms is a power in itself, particularly if an organization holds that power to a monopolistic or oligopolistic degree. This dualism, where the empowerment of the public supports and enhances that of the tech organisations, connects with ongoing intellectual debates about the nature of power and how it is shifting.

To say that debates about power and its conceptualization are deep and have a long history would be an understatement. This study does not intend to step into these broader debates about the conceptualization of power. Rather it tries to identify the particular types of power that new digital media organisations are acquiring. To do this it takes its understanding of power from the seminal work by Steven Lukes. [141] Notably, from Lukes' explanation of the three dimensions of power and his thesis that power is as much about the creation and control of the environment in which choices are made, as about a person or institution actively directing another to comply. As Lukes writes:

> 'A may exercise power over B by getting him to do what he does not want to do, but he also exercises power over him by influencing, shaping, and determining his very wants' (Lukes, 2005: 27).

As this study will show, this is chiefly how the power of the information intermediaries is exercised. The services these intermediaries offer can influence, shape and help determine people's wants, since these organisations now play a significant and growing role in the extent to which citizens acquire information, communicate with one another, relate to authorities, and represent themselves.

Yet, the issue is complicated since the digital tools provided by these intermediaries (and others) can empower the public to challenge authority. Manuel Castells has written at length about this, capturing the idea of a digitally enabled public in the term 'counterpower'. In this sense the digital intermediaries conform to Castells' description of the media more generally as 'the space where power relationships are decided between competing political and social actors' (Castells, 2009). However, in providing the public with these tools the digital intermediaries are gaining power themselves as a consequence. The acquisition of power by the public and by the tech companies is not contradictory but complementary. For this reason it may be necessary to extend Lukes' third dimension of power to recognize that 'media [interpreted as including digital media] might provide a site both for the exercise of and resistance to power' (Freedman, 2014).

However, as this study argues, potential problems emerge from the disparity between the capacity of the tech giants and the capacity of the individual. An individual may be able to set up a campaign on Facebook, which any of Facebook's 1.5 billion active users can join. Whereas Facebook can enable or disable the campaign (and ones similar), can obscure it, or can promote it to a part or a whole of its global user base. In this way it has the power to influence, enhance or constrain the ability of a campaign or political movement to pursue its cause. A future leftist reform movement could therefore, Evgeny Morozov cautions, be 'bereft of any requisite ability to deliver on its agenda, for all the platforms for communication ended up in the private hands of techno-monopolists and their lobbyists'.[141]

It is not surprising that neither the tech giants themselves nor democratic societies more widely, understand the nature of the intermediaries' power yet. It took many years for democratic societies to understand and embrace a free press (and tensions and restrictions persist). Some of these corporate giants are barely a decade old.

But it is necessary and urgent that democratic societies better understand this power. Otherwise there is a risk that it is not used constructively or responsibly, that citizens do not have adequate protection from the use or misuse of this power, or that democratic governments respond to this power in ways that are regressive or even harmful to citizens. This power therefore needs to be studied, its sources and its outcomes understood, and responses to it considered and evaluated.

Identifying the newfound types of civic power these organisations exercise is a necessary first step to understanding the benefits and dangers inherent in that power to democratic societies. This study identifies six:

1. The power to command attention

2. The power to communicate news

3. The power to enable collective action

4. The power to give people a voice

5. The power to influence people's vote

6. The power to hold power to account

Civic power and the media

The idea that the media has an essential civic role has a long pedigree. Edmund Burke referred to the press as the 'Fourth Estate' in the Houses of Parliament in 1787.[142] In the same year in the US, Thomas Jefferson argued that, given the government is supposed to represent the views of the people, the press are more central than even the government itself.[143]

The specific civic roles of the press (in its broadest sense) have been described, analysed and summarized many times, and though there is much disagreement as to their exact nature there appears to be some consensus as to at least three or four key elements. These are: as a source of information (particularly regarding topics of public interest); as a 'watchdog' that holds powerful individuals and institutions to account; as a platform, or public sphere, to enable debate amongst citizens; and as a channel through which diverse citizens and interests can express their views and concerns.[144]

In performing these roles the media has acquired powers, some formal, some informal. It has formal powers within the law (such as exemptions and subsidies), and informal powers that come from its scale, reach and authority.[145]

This study assesses the degree to which large information intermediaries are starting to perform civic functions previously associated with the Fourth Estate, at how they may be providing further civic functions not previously performed (or performed in a different way), and the power they are acquiring as a result.

Though there are not yet other studies that approach information intermediaries in quite this way, there are a growing number of studies on the use of information intermediaries' services for political and social ends. There are, for example, many analyses of the use of Twitter and social media during elections or as a means of social protest.[146]

A smaller, but growing number of studies examine the particular effect of the information intermediaries themselves on politics. These focus on civic engagement and participation,[147] electoral influence,[148] internet governance,[149] free speech[150] and access to news.[151] A study commissioned by Facebook tested the filter bubble effect.[152]

Natali Helberger wrote a particularly useful study mapping the legal, social and economic issues provoked by information intermediaries in 2014. In this she identifies five concerns about the influence of information intermediaries on public opinion and media pluralism: direct editorial influences, indirect editorial influences (for example through prioritization and discoverability), indirect-structural influences (for example ISPs and network neutrality), influence on media markets (for example through direct competition with media companies), and 'wider direct or indirect influences on user rights and democratic freedoms'.[153]

A number of attempts have been made to evolve and explain how plurality and diversity, as understood in the twentieth century, can be understood in the context of digital intermediaries in the 21st.[154] Despite these, and their emphasis on the transition from a world of information scarcity to one of information abundance, plurality policy remains fixed on the model of access to number of sources.

The filter bubble thesis, which suggests that the personalization of digital services is such that people may only be exposed to information that confirms their existing worldview, is generating its own library of research.[155] Separately, there is increasing interest in the concept of 'algorithmic accountability', the idea that mechanisms are needed to assess the way algorithms – that underpin the services of digital intermediaries – work.[156] There are also studies of the various tech giants themselves, particularly on their origins and the personalities behind them.[157]

This study takes a broader view. Rather than focus on a specific aspect of political or social engagement or on a particular intermediary, it looks at the broader phenomenon of large, transnational communications corporations and the civic role they are beginning to play.

It does this because, in the same way that the press altered the nature of government and governance in the C18th, C19th and C20th, so digital will alter it in the C21st – and the intermediaries will be integral to those changes.

The assessment here is certainly not intended to be comprehensive. The information intermediaries will be performing many political and social functions beyond those described in this report. Those described here are those that have been identified by the author and that have direct civic implications. The report does not examine issues around security and privacy that are discussed extensively elsewhere.

Nor is the assessment intended to be more than an initial examination of such an enormous and emerging subject. It can only touch on areas – such as collective action – where far more research is needed to understand the effect information intermediaries and their services are having.

It is, however, intended to introduce the idea that these information intermediaries are starting to perform important civic roles, and acquiring civic power as a result, and provoke consideration about what the implications of this are for democratic societies, including how best they should respond.

1. The Power to Command Attention

Traditional media organisations are accustomed to commanding attention. On 1 Sunday February 2015 over 114 million people in the US saw the New England Patriots' 28-24 victory over the Seattle Seahawks on NBC, a record number of viewers for the Superbowl.[158] In May 2015 almost 9 million people in the UK watched Arsenal beat Aston Villa on BBC One in the FA Cup final.[159] This ability to command the attention of millions of people – particularly at home – is central to these media organisations' power, prestige and sustainability.

Yet these audiences are dwarfed by the attention commanded by the services of the information intermediaries. Facebook had 968 million daily active users in mid 2015.[160] The average user spends 46 minutes a day checking their Facebook profile.[161] Eight billion videos were viewed each day on Facebook in late 2015, up from three billion by the end of 2014.[162]

'Every day,' according to YouTube, 'people watch hundreds of millions of hours on YouTube and generate billions of views'.[163] The most recent YouTube statistic available, from 2012, claimed the site was receiving four billion views per day worldwide.[164]

Attention that used to be focused on traditional media channels and programmes is being transferred to the platforms of the intermediaries. Unlike traditional media like television, these information intermediaries can reach an individual rather than a household. They can also, thank to the mass adoption of smartphones, reach the individual in any place, at any time.

The tech giants argue they are not equivalent to traditional media organisations and should not be viewed in the same way. They are, they say, only platforms (see, for example, *Tamiz vs Google*)[165] and they simply act as pathways to enable people to reach content. As platforms that provide access to other content, or 'mere conduits' as it is described, they gain legal protection they would not otherwise have, for example through section 230 of the Communications Decency Act (2000) in the US and through exemption from aspects of the European E-commerce directive. Moreover as platforms, they argue, they should not be considered responsible in the same way that traditional media publisher would be.

Yet their ability to command attention enables them to go beyond their stated role as conduits and to perform valuable civic functions. During the UK floods of 2014 Facebook chose to direct people in areas affected by flooding to local volunteers.[166] After the Nepalese disaster Google re-opened its 'Person Finder' tool to help people find those injured, lost or killed in the disaster.[167] Twitter has, for many years, been a critical source of news during natural disasters, a facility that was formalized through 'Twitter Alerts' in 2013.[168] In October 2014 Facebook launched 'Safety Check' as a way to help people alert loved ones they are all right, in the wake of natural disasters.[169] In January 2015 Facebook launched 'Amber Alerts' to help people find missing children.[170]

Over 100 billion searches are done on Google each month.[171] One in twenty of these searches, Google reports, are health-related.[172] To help people with their health searches, Google started putting health information directly into search results.[173]

Similarly, in national elections the tech giants have often sought to play a constructive role. This has ranged from supplying technology to campaigns, providing election information and communications support, and hosting debates.[174] The public can make political donations via Twitter.[175] In a well-known experiment in 2010 Facebook went further. In both the UK and US elections that year it added an 'I voted' button to people's profiles. According to subsequent research this directly motivated 60,000 voters to go to the polls in the US, and that in turn triggered 340,000 extra votes.[176]

Between elections these platforms enable dialogue between citizens and government. As the Google Public Policy Blog states: 'From live streams of the State of the Union and legislative hearings, to explainer videos on important issues and Hangouts with constituents, YouTube has become an important platform where citizens engage with their governments and elected officials'.[177]

Evan Williams, co-founder of Twitter, hoped the micro-blogging platform would become one of the primary ways in which people communicated with public authorities: "I think Twitter will be a fundamental part of how people interact with their government," Williams said in 2010. "I think it will be how you get personal, customised information from every entity you care about, from your local café to your government, from your politician to your friends and family".[178]

One can understand and applaud the way large information intermediaries have begun to play such an important part in communicating public interest information and providing civic help and support, though there is no question that their actions piggyback on their ability to command attention and go beyond those of 'mere conduits'.

This is made clear by the few occasions information intermediaries have chosen to use their platforms to express their own political view. Google blacked out its logo in January 2012 in protest against the Stop Online Piracy Act (SOPA) and Protect IP act (PIPA). It also urged people to sign a petition against the bills.[179] On 22nd May 2015 Google's homepage in Ireland told its users they should #VoteYes in the Irish referendum on gay marriage (the motion passed with a Yes vote of 62 per cent).

When the tech giants pursue a campaign, it gains attention and followers very quickly. A range of tech leaders joined together in 2013 to form a campaign to reform immigration law in the US. Mark Zuckerberg helped lead the campaign, with the support of Reid Hoffman, CEO of LinkedIn, Bill Gates of Microsoft, and Sean Parker. Its backers included Eric Schmidt of Google and Marissa Mayer of Yahoo. 'In a matter of weeks, FWD.us went from a mere idea to a leading organization in the fight for comprehensive immigration reform' the campaign website said (www.fwd.us).

The use of their power to command attention to promote their own views and services takes large information intermediaries beyond neutral platforms, and can give them a political power comparable to that of a broadcaster. The difference being that, in many democracies, broadcasters are constrained in what they can broadcast and in the political views they themselves can express.

In Britain, and elsewhere, broadcasting was seen as too powerful a medium, and too open to political abuse, to be purely commercial.[180] It was considered to be a 'utility to be developed as a national service in the public interest',[181] and is regulated as a public service.

Deciding what should command attention

Even if they do not express their own political views via their services, the large information intermediaries have the power to help determine who or what should command attention. They can act, in other words, as a non-neutral 'gatekeeper', controlling the access to content and services. As gatekeepers, they can help define terms that include rights of access, prioritization, and terms of use.[182]

When internet.org first launched in India in February 2015, there were – in addition to Facebook – 37 websites and apps available via the service.[183] People in India could access the services of these providers via their mobile phones for free. If they wanted to use other services they had to pay. How these particular services were initially chosen is not clear, though Facebook is the controller of internet.org.

Within two months of launch there was a major backlash. Small companies and start ups argued that internet.org breached the principle of net neutrality and would give companies within the internet.org walled garden a huge advantage over those outside. It would also make Facebook the gateway for many Indian citizens, capturing and tracking their personal data. "Internet.org isn't increasing internet access," small businessman Nikhil Pahwa told The Verge, "It's increasing Facebook access".[184]

Companies that had signed up to internet.org, such as Cleartrip, NDTV and the Times Group, said they would withdraw some or all of their content from the service.[185] Zuckerberg himself stepped in and argued that 'net neutrality is not in conflict with working to get more people connected', a position that was strongly contested by others.[186]

Facebook opened up its walled garden to all applicants in India in May 2015, under certain terms and conditions. This did not mollify the critics who argued it still represented a 'fundamental, permanent change in the way the internet works', that it was a 'privacy nightmare', and that the prime beneficiary would still be Facebook.[187] Facebook renamed the service Free Basics and continued to contest that some internet access was better than none. In February 2016 the Indian telecommunications regulator ruled that Free Basics' differential pricing did breach net neutrality and would therefore, in effect, be banned in India.

All information intermediaries play a gatekeeper role to some degree. Apple, for example, makes decisions about what apps should be allowed on its iOS platform according to its own criteria.[188] Google search determines what should be on the first page of search results. Amazon decides by what criteria its users should be able to navigate books.

In some cases the intermediaries are determining what information should command attention. In others – such as Facebook's Free Basics – the intermediary determines whether information should be accessible at all. Those who cannot afford more than Free Basics will, by definition, have less equal access.

Moving from platform to publisher

The power to command attention is also encouraging some of these companies to move from being intermediaries to become fully-fledged media companies. Google, Amazon, Apple and Facebook all invest in content creation. In 2012 Google spent $200 million on original content for YouTube.[189] At the beginning of 2015 Amazon announced it planned to 'to acquire, produce and release a dozen films a year'.[190] These investments are in addition to its television series, on which it said it spent $100 million in the third quarter of 2015 alone. Facebook has sought to mimic the YouTube model and share revenues with video producers.[191]

As the large information intermediaries began to acquire, produce and distribute content, increasing numbers of people have suggested the distinction between platform and publisher is becoming 'obsolete'.[192] By mid-2015, observers noted, it was becoming ever harder for information intermediaries to claim they were neutral conduits:

> "It is no longer possible [for social platforms] to say 'we are just a platform'," said Emily Bell, director of the Tow Center at Columbia University. "It's become impossible to sustain the argument that says we have no responsibility to people who upload content, and we have no responsibility to people who are affected by it"[193]

At the very least, now that these information intermediaries are commanding such public attention and producing and distributing such content, it seems appropriate to ask what responsibilities they plan to take on, and whether some of the rules that apply to traditional media organisations should apply to them. Should, for example, there be rules regarding the use of these platforms by political parties or politicians in the lead up to an election? How comfortable should democratic societies be that dialogue between politicians and the public be mediated by these commercial corporations – corporations that have their own political views? Should these organisations be able to determine which sites gain the most attention (by providing a low cost or no cost gateway), and thereby compromise equality of access?

The power of these information intermediaries to command mass attention can be used for public goods and purposes, for commercial ends, or indeed for self-interested and potentially harmful ends. It can be used during humanitarian emergencies, in the lead up to democratic elections, or to solve healthcare questions. Democratic societies need to ask themselves whether they are happy to outsource these roles to private companies, and examine more closely what mechanisms should be in place for when things go wrong.

2. The power to communicate news

When, in May 2015, Facebook announced it had done a deal with nine news organisations to host their content it was, to many within the industry, unsurprising. More than that, it was – in the words of media commentator Steve Hewlett – seen as a 'win-win'.[194] News organisations could spread their content further, Facebook would gain more valuable content for its newsfeed. Yet for some of those inside and outside the industry 'Facebook Instant Articles', as it was called, looked quite strange. Here were some of the world's most prestigious news organisations uploading their stories, their pictures, their videos, into Facebook's own system, making Facebook the publishing platform. Why would they do this?[195]

The news organisations did it willingly because of the reach and attention Facebook can give them. No news organization can claim to be viewed regularly by over a billion people. Facebook can. The 2015 Reuters Institute Digital News Report found that across twelve countries, 41 per cent of people surveyed now used Facebook 'to find, read, watch, share, or comment on the news each week – more than twice the usage of its nearest rival'.[196] A 2014 report from the Pew Research Center found that 'Roughly two-thirds (64 per cent) of U.S. adults use the site [Facebook], and half of those users get news there — amounting to 30 per cent of the general population'.[197] In the UK, Ofcom found that the use of social media for news leapt 11 per cent from 2014 to 2015, from 20 per cent to 31 per cent.[198]

Looking at younger generations, particularly 'Millenials' (18-33 year olds), the importance of social media as a channel for news is even more stark. 'About six-in-ten online Millennials (61 per cent) report getting political news on Facebook in a given week', the Pew Research Center found. They are also much more likely to find news via Google, one third (33 per cent) sourcing their political news from Google News. This sharply contrasts the younger generation from their parents. The Pew Center writes, 'that younger and older generations espouse fundamental differences in the ways they stay informed about political news'.[199]

Facebook is one of a handful of US information intermediaries through which people are finding news. 320 million people regularly used Twitter in 2015.[200] Twitter had become such an important source of news that democratic governments have asked it to maintain its services during elections, and less democratic countries have sought to cut it off (see US on Iran 2009, and Uganda 2016). By 2015, search engines such as Google had taken over from traditional news organisations as trusted news sources, according to a survey published in January,[201] even though Google and others aggregate rather than gather the news.

'The starting point to a news journey', the 2015 Digital News Report stated, 'is less likely to be a brand homepage and increasingly likely to be via a search engine, a social network, email, or the lockscreen of a smartphone'. Yet, if Facebook Instant Articles succeeds, industry experts note, some of these information intermediaries may be the end point for news as well as the starting point.[202]

Other information intermediaries, recognizing the importance of news to promote traffic, began introducing competitive news distribution services. Apple introduced a 'FlipBoard-like' news service in late 2015. Unlike some of the existing algorithmically

generated news services, like Google news, Apple hired journalists to "help identify and deliver the best in breaking national, global, and local news… These editors will help [Apple] News users find the best and most timely coverage of major news events, while also managing select categories based on their areas of professional expertise." To most people this sounds similar to a traditional newsroom, and was described as such by some.[203] Apple, for its part, chose not to make clear exactly how news would be chosen. Then in October 2015 Twitter launched 'Moments', a curated news service that helped you 'discover stories unfolding on Twitter'.[204] Again, this was seen as a move towards becoming a media business. Moments shows that Twitter is 'the latest technology company to push further into the media business', the *Financial Times* reported.[205]

These, and other emerging services, give these information intermediaries a crucial role in determining what news citizens are exposed to (or not exposed to), how diverse this news is, and how it is prioritized and filtered. Mark Zuckerberg described Facebook's eventual aspiration as being able to give everyone their own tailored news outlet: "Our goal is to build the perfect personalized newspaper for every person in the world."[206]

The news organisations are, in this sense, losing their power to set the news agenda, and help inform the public. Emily Bell goes further and argues that:

> "News spaces are no longer owned by newsmakers. The press is no longer in charge of the free press and has lost control of the main conduits through which stories reach audiences. The public sphere is now operated by a small number of private companies, based in Silicon Valley."[207]

This is a critical shift in power. Yet it comes without any of the long build up that accompanied the development of the Fourth Estate and its semi-constitutional role. As such, it remains unclear the extent to which different information intermediaries define themselves in part by their independence from government, what journalistic codes – if any – they adhere to, or how seriously they take their civic responsibilities. As Natali Helberger writes: 'so far there has been little indication of either a commitment to journalism ethics such as a sense of informing citizens for public interest or an interest in setting an identifiable political agenda. The companies behind these new gatekeepers provide little to no information on these matters, making a systematic academic assessment difficult.'[208]

There is some evidence, however, that the information intermediaries have started to acknowledge this role. Mark Zuckerberg said, in 2014, that he was conscious of it and was ready to accept and embrace it. 'We take our role in this civic debate really seriously' Mark Zuckerberg said at a townhall Q&A hosted by Facebook in December 2014. Access to diverse opinions was, Zuckerberg said, 'really important' and he argued that, thanks to Facebook, people were much more likely to discover diverse views than in the past. 'That means whatever TV station you might listen to that has an opinion, whatever news you might read, on Facebook you're hearing from a broader set of people… than you would have from any other type of media that you would have consumed" (Facebook Townhall Q&A, 2014). So concerned was he about diversity that he linked to a separate Facebook post by Eytan Bakshy about his work on echo chambers.[209]

Google has said it takes its role similarly seriously. It supported a news 'Trust Project' that 'crafts tangible digital strategies to fulfill journalism's basic pledge: to serve society with a truthful, intelligent and comprehensive account of ideas and events'.[210] Explaining the project, Richard Gingras and Sally Lehrman wrote that 'Online chaos deserves radical action' and that it is 'time to consider new approaches' to helping people figure out whether to trust news'.[211]

Yet, in most cases we have to accept these organisations' commitment on trust. We cannot assess, for example, how they filter and prioritise news because this is done opaquely, via algorithms (notably Facebook's 'Edgerank' and Google News).

From the citizen's perspective, accepting this commitment is problematic. When almost all our news is channeled through particular gateways then, as citizens, it is important that we are aware which information is filtered and why. Google's definition of important, or accurate, or impartial, or relevant, news may be different from ours. Yet without knowing how it is determining what we see, we cannot judge.

A range of civic questions follow from this. What are the principles, if any, to which these algorithms adhere? Should such principles be universal? Where is the internal governance to reassure us that these algorithms are being used fairly? What are the self-regulatory arrangements to prevent abuse and react if abuse occurs? How can we insure against discriminatory algorithms? How can we even assess whether we are in a partisan information 'filter bubble'?[212]

On the 'filter bubble' question, Facebook tried to reassure its users by commissioning some research. Bakshy, Messing, and Adamic sought to test whether Facebook's algorithms were reducing the amount of ideologically diverse news and opinions people were receiving in their news feed. They discovered that they were, although people's choice of friends had a greater impact than the algorithms.[213]

Yet rather than reassure its users and critics, the Facebook research inflamed them. Academics and others questioned the sampling, the approach and the framing of the findings. Christian Sandvig and others noted that the sample was likely to be highly skewed from the average because of the criteria used (explicit affiliation with a political party).[214] Zeynep Tufekci highlighted how strange it was to compare individual choice to algorithmic choice when the two are complementary on Facebook.[215] Eli Pariser, the author of *The Filter Bubble*, wrote how the study showed that 'there is a real and scientifically significant "filter bubble effect"' although the study downplays the role of Facebook's algorithm in that effect.[216]

While observers may be worried about the filter bubble effect, the information intermediaries seem much less so. When Larry Page, Alphabet's chief executive, was questioned about it in 2013 he said 'People have a lot of concern about that—I'm totally not worried about that at all. It sounds kind of funny to say but that's totally under your control'.[217]

There are equally important questions regarding how news is chosen, and which news organisations are prioritized over others. Facebook Instant Articles launched

with a series of large and high profile news partners. YouTube news search results are weighted to 'trusted news providers' though YouTube does not publish the names of these providers.[218] Twitter Moments states that 'When selecting Moments around controversial topics, we will choose topics that are big news in the mainstream press or are demonstrably large public conversations on Twitter'.[219]

Though one can understand why these large intermediaries would find it easier to partner with, and to prioritise, news from large established news organisations, this will narrow the diversity of news and create structural barriers for smaller news providers.

Giving a handful of US commercial corporations dominant control of the distribution of news and information, particularly when many of their methods for filtering news are opaque and when they have limited accountability, carries with it democratic risk. As James Ball wrote in *The Guardian*, 'Whether you are an ardent First Amendment advocate or a passionate believer that networks must do more to police their backyards, the worst of all possible worlds for the flow of information is one in which we shift from the rule of democratic law to one governed by the arbitrary, inconsistent and perhaps kneejerk rulings of a tiny group of large companies'.[220]

These commercial organisations, however well meaning, will have goals that will not always coincide with those of all the democratic publics they are serving. With regards to civic purpose, their primary goals may not always be towards open, non-discriminatory and diverse public spaces or to news values that coincide with those of every citizen. Nor is it apparent whether they will have the resolve of traditional news organisations when it comes to publishing news on their platforms that governments do not like.

These organisations could, should they wish, address some of these concerns. They could, for example, set up independent internal governance structures, like the Scott Trust at *The Guardian*, to set out the principles by which news is gathered and distributed, and to scrutinize the algorithms that direct news. Alternatively they could institute forms of public oversight.

The case for public oversight of search, and algorithm transparency, was made as far back as 2000. In 'Shaping the Web: Why the politics of search engines matters' Introna and Nissenbaum suggested that search engines 'systematially exclude' certain destinations, that this runs 'counter to the basic architecture of the web' and that the market alone is unlikely to solve the problem.[221] Laura Granka added further nuance to the question in 2010, arguing that we needed to examine diversity within platforms and services, not between them.[222] Yet there remains little consensus about the nature of the problem, and even less about possible responses.

We are still only starting to learn about the effect that these changes are having on public understanding and civic participation. Yet they are happening so quickly we need to learn fast and better assess the implications before these changes become fixed and we find that, as democratic citizens, we rely for our news on channels about which we know little and over which we have minimal influence.

3. The power to enable collective action

> "I want to meet Mark Zuckerberg one day and thank him, actually. This revolution started online. This revolution started on Facebook." - Wael Ghonim, from transcript at 'Mark Zuckerberg, Modern Day Moses?' *Business Insider* [223]

There is plenty of debate about the role that Facebook, and other technology platforms, played in the Egyptian revolution of 2011. Yet there is evidence that these large social media platforms – notably Facebook and Twitter – were critical in the early stages for sharing information, co-ordinating dissent, as an entry point for those who were nervous about supporting a non-conformist movement, and as an indication of the strength and depth of opposition to the regime.[224] Prior to the Egyptian uprising of 2011, Schmidt and Cohen write, Twitter was also used to co-ordinate action in Moldova, Youtube was used to spread activist information in Iran, and Facebook was used to organise a mass demonstration in Columbia.[225]

In May 2011 Mark Zuckerberg played down the importance of Facebook to Egypt, telling the eG8 that "It would be extremely arrogant for any specific technology company to claim credit. People are now having the opportunity to communicate, that's not a Facebook thing. That's an Internet thing."[226]

While Zuckerberg may have been right to disclaim credit, it would seem peculiar not to acknowledge the growing importance of Facebook, Twitter, WhatsApp, Instagram, and a handful of other digital tools to twenty-first-century campaigns and social movements. Indeed for many the argument has moved beyond whether digital media does or does not help enable protest or political action to the roles that it plays within different protests and the affects that this has.[227]

Zeynep Tufecki argues convincingly that social media is now central to political movements, and to their structure:

> 'Social media, an integral aspect of all these movements, is not a mere 'tool' that is external to the organizational and cultural structure of these movements. Instead, it has become increasingly clear that communication is a form of organization, and the form of communication strongly interacts with the form of organization.'[228]

Certainly, it is now a given that democratic publics will use Twitter, Facebook, Youtube and associated messenger services for civic engagement, debate, and support. People show their political support or solidarity, for example, through Twitter: #jesuisparis #blacklivesmatter #hometovote #refugeeswelcome, #IStandWithAhmed, #icantbreathe. Political discussion groups, like Partisan Exchange and Master Debates, thrive on Facebook. Debates between political candidates attract thousands of comments on YouTube (see, for example, '2nd CNN Republican Presidential Debate Part 1/5 Sept. 16, 2015'). At the very least, Facebook and other similar technologies lower the organizational costs of co-ordination and participation by creating digital tools that make joining and supporting more straightforward.[229]

Supporters of political action turn to social media to rally support and to co-ordinate activism. Supporters of Alexander Navalny, a Russian politician and activist, used Facebook to organise action in protest against his prosecution in December 2014. Young participants in the pro-democracy protests in Hong Kong in 2014 used Facebook as their main platform.[230]

This type of participation will rise and become more mainstream, predicts Ethan Zuckerman, head of MIT's Centre for Civic Media. It 'will become the norm, not the exception,' Zuckerman writes, 'for political and activist campaigns to rely on social media, crowdfunding and other digital techniques as well as advertising, lobbying and conventional fundraising'.[231]

Social media is already often central to democratic election campaigns. For the 2015 UK General Election campaign the Conservative Party spent more than £1.2 million on Facebook, according to accounts filed with the Electoral Commission.[232] The platform helped the Party 'microtarget' and to enable it to have multiple contacts with undecided voters in the weeks and months before the election. Facebook was, according to an interview with Jim Messina – a senior advisor to the Conservative campaign – 'the crucial weapon'.[233] Equally, candidates were more than twice as likely to link to Youtube from Twitter – often to a party political video – than they were to BBC news.[234]

Since certain platforms are so dominant, political action and movements are able to gain reach and scale quickly. In 2014 the 'ice bucket challenge' became a 'global phenomenon, with more than 17 million videos watched on Facebook by more than 440 million people—and more than $100 million raised [for research into Lou Gehrig's disease and for other charitable causes].'[235]

The dominance of these platforms also enables people to see many of the causes that others have supported (and not supported), and keep a record of their own support. Chris Wells argues that digital tools have become not only essential to engagement with and co-ordination of political action, but are also becoming central to an individual's political identity. 'Part of being a late modern citizen' Wells writes, 'means that your choices are constitutive of your civic identity rather than the other way around; every choice is an expression that makes you who you are'.[236]

Empowering people to come together to co-ordinate action for political change can have major civic benefits. It can augment civic participation. It can enable, enhance and accelerate collective action. It can lower the obstacles to supporting a political issue, party or figure. It can boost fundraising for causes like environment, tax reform or civil liberties.

Here again the new information intermediaries are supplementing and even superseding the role of the press, in terms of campaigning and co-ordination. Where previously a local newspaper would have begun a campaign on an issue of civic importance, such a campaign is now much more likely to begin on Facebook or Twitter, whether this is to save a library, to stop a bypass, or find a missing child.

Yet the public often choose to use these intermediaries as though they are civic spaces, when they are private, commercial spaces. As Ethan Zuckerman put it:

> 'Hosting your political movement on YouTube is a little like trying to hold a rally in a shopping mall. It looks like a public space, but it's not – it's a private space, and your use of it is governed by an agreement that works harder to protect YouTube's fiscal viability than to protect your rights of free speech.'[237]

As private commercial spaces they have their own rules and means of enforcing them – as do shopping malls with private security firms. ''We use the information we have [about you] to help verify accounts and activity,' Facebook writes, 'and to promote safety and security on and off of our Services, such as by investigating suspicious activity or violations of our terms or policies'.[238] Once on the platform users have to adhere to the rules of its commercial owner.

This might be less of a concern were a handful of information intermediaries not so dominant. The dominance of a small number of organisations, while it can be a great benefit, can also be a danger. It can mean that people do not have an equivalent choice. If they want their campaign to be a success, it has to be on one of these platforms or other people will not see it and will be less able to support or participate in it.

The controllers of these spaces are free to intervene to disable civic action should they want to. The Facebook page set up by Navalny supporters was reportedly blocked by Facebook at the request of the Russian prosecutor's office.[239] New pages were soon set up and 'Facebook and Twitter said they would not block any protest pages in Russia'.[240] In Hong Kong a popular cartoon collective which was promoting the pro-democracy referendum found its Facebook administration page blocked. Its administrator 'spent weeks lobbying Facebook to unblock the site, with little progress'.[241]

Political parties that come to rely on the tools of these organisations may suddenly find they are removed. In 2011/12, for example, President Obama's campaign team used online tools to register more than a million people online and to raise $690 million.[242] One of the tools they used, which proved highly influential, was Facebook's targeted sharing. This allowed Facebook users to share their friends with the Obama campaign, and for the campaign to tell them with which friends to share campaign material. Facebook altered this tool in 2014 to prevent it being done again.[243]

The dominance also means that these organisations record lots of information about an individual's political activities, all kept linked together in one place. Where, in the past, someone might have attended a political rally, made an occasional donation to a political party, read political texts from the library, and been friends with a political radical, little of this would have been recorded by democratic governments, and certainly not recorded centrally. Now, partly thanks to the emergence of the tech giants and their platforms, most of this information is recorded on one, or a small number, of central databases. This is leading, for many of us, to what might be characterized as a digital political self. This digital political self could be of significant value to us, and to others. Indeed Eric Schmidt and Jared Cohen argue that 'Identity will be the most valuable commodity for citizens in the future, and it will exist primarily online'.[244]

Information about our political activities can, for example, be of great interest to governments, especially autocratic ones. As Evgeny Morozov has illustrated, digital tools can help governments more easily identify political activity and dissent.[245]

In China they have recognized the value of these platforms as a means of co-ordinating dissent and sought to disrupt them. Research by Gary King, Jennifer Pan and Margaret Roberts has found that, contrary to previously held assumptions, the Chinese government let people speak relatively freely online. It only intervened, and intervened strongly, when people start to co-ordinate collective action. King's findings 'show that the [Chinese government's] censorship program is aimed at curtailing collective action by silencing comments that represent, reinforce, or spur social mobilization, regardless of content'.[246]

Nor is it just non-democratic governments that are interested in people's political activities. The UK government made it clear in 2014 that it would like the information intermediaries to keep watch over communication on their platforms and pass on any information that may indicate possible terrorist activity to the authorities. Facebook, and companies like it, 'should accept they have a responsibility to notify the relevant authorities' the UK government said following the investigation into the death of Fusilier Lee Rigby, 'when an automatic trigger indicating terrorism is activated and allow the authorities, whether US or UK, to take the next step'.[247]

Democratic governments' interest in tracking political dissent has also, historically, extended well beyond terrorism. For many years, for example, the UK police infiltrated activist groups for the purpose of intelligence and disruption. The Special Demonstration Squad (SDS) was a covert unit within the UK Metropolitan Police that embedded police in domestic political groups between 1968 and 2008. Over many years, an investigation into the unit found in 2014, the SDS 'placed undercover officers inside a wide range of activist groups, targeted principally around the groups' potential for committing, fomenting or providing intelligence on public disorder'.[248] This included environmental protestors and 'an undercover officer in the SDS [who] was working within the "Lawrence family camp" during the judicial inquiry into the Metropolitan Police's botched investigation into the teenager's murder'. The information provided by officers led to dozens of convictions, many of which were subsequently overturned since evidence critical to their conviction was hidden during their trial.[249]

Although many of the information intermediaries have made commitments regarding freedom of speech and privacy (as part of the Global Network Initiative), they have not made parallel commitments regarding freedom of association. Though, as seen in China, freedom of association may be as important to political dissent as freedom of expression.

Most of the large technology companies release transparency reports, in which they document the requests made by governments and law enforcement – chiefly for user data. Although companies like Google and Twitter began these prior to the Edward Snowden leaks in 2013, many more started publishing similar reports following the leaks. These help indicate the extent of government requests if not the

nature of individual requests. Towards the end of 2015, Ranking Digital Rights, a project to assess the disclosure and practices of sixteen of the largest internet and telecommunications companies, published its first 'Corporate Accountability Index'. The index ranked each company according to 31 indicators, based around issues that affected their users' free expression and privacy. Google led the rankings, with a 65 per cent rating, whilt Microsoft came third and Facebook eighth (of sixteen). [250]

Global information intermediaries now have tremendous power when it comes to collective action. They already help enable it, they can choose to disable it, or make it more difficult. They can, should they choose, work with authorities, overtly or covertly, to identify the participants in the action and the leaders of it. Yet much of the control for how this information is captured and used, who it is passed on to, and how it may be discovered, remains with the information intermediaries.

Concerns about preserving free speech online are long established, and action to protect and enhance free speech ongoing. Yet fewer concerns are expressed about the need to preserve and enhance our ability to co-ordinate collective action using these digital tools. The information intermediaries themselves could act to mollify concerns about their policies. They could, for example, be more transparent about when they are working with the authorities, the reasons for that co-operation, and the results of it. They could set out the principles by which they will or will not enable collective action. They could enable greater interoperability so that people can transfer their political profiles and their campaigns to other platforms and other spaces.

Social media platforms may not have sought this power and, based on Zuckerberg's 2011 comment at the eG8, may rather defer it. However, now that they have it, they will need to decide how to use it, protect it, and evolve it. Equally, democratic societies have to consider whether citizens need greater protection to associate freely online.

4. The power to give people a voice

Inherent in our understanding of the power of the net is its capacity to enable expression. Thanks chiefly to the net, Hillary Clinton said in 2010, 'information has never been so free. There are more ways to spread more ideas to more people than at any moment in history'. This capacity then forms the basis, Clinton said, for international accord: 'Information freedom supports the peace and security that provides a foundation for global progress'.[251]

The internet's capacity to enable expression, innovation, and the spread of ideas is such that some have suggested it may require a redefinition of free expression. Speaking in 2009 Jack Balkin argued that, in the twentieth century, we developed a narrow concept of freedom of speech as a consequence of information scarcity. Yet, 'the digital age makes increasingly clear that the point of the free speech principle is to promote not merely democracy, but something larger: a democratic culture' Such a culture would recognize the importance of participation, sharing, and creation as well as speech itself.[252]

Some of the tech giants, such as Alphabet/Google, have been integral in enabling such an expansion of free expression. Indeed many see it as synonymous with their purpose. '[W]e want to give everyone a voice' Mark Zuckerberg said at a Facebook Townhall Q&A in December 2014.[253] 'I think we at Google pretty clearly have a strong desire for freedom of speech, for a free flow of information' Larry Page said at the Google I/O in 2013.[254] 'The Tweets must flow' Biz Stone from Twitter wrote in 2011; 'Our goal is to instantly connect people everywhere to what is most meaningful to them. For this to happen, freedom of expression is essential'.[255]

Consciously or unconsciously, some of these values were built into the technology of these organisations and their services from the start. The view of many information intermediaries appeared to be that their role was simply to give people a platform on which to express themselves, with virtually no constraints on how they used that platform. In this way their interpretation of free expression seemed closer to the broader conception as outlined by Jack Balkin, rather than the narrower 20th century ideal. They saw themselves as enabling a much richer and more democratic space than existed under previous media.

'Whereas the traditional press is called the fourth estate, this space might be called the "interconnected estate"' Eric Schmidt wrote of the web, 'a place where any person with access to the Internet, regardless of living standard or nationality, is given a voice and the power to effect change'.[256]

Old media was intrinsically narrow, Zuckerberg said at an event in 2014, limiting the space to only a small number of voices. By contrast, new media enables everyone to speak:

> If some events like this [a Townhall Q&A] had happened 50 years ago then you might have only read about it from the newspapers or TV, and a few voices. But now what we're trying to do is make it so that every single person in the world has a voice and a channel and can share their opinions or research or facts that they've come across and can broadcast that out to their friends and family and people who follow them and want to hear what they have to say.[257]

Yet, over the last decade, most of the large technology companies have shifted their positions, in response to cultural, commercial and government pressures. They have introduced more rules to govern speech and participation, and instituted more mechanisms for the removal of people and content that transgress these rules. Though this may be their prerogative as private companies, their size and dominance make it a broader societal issue. Especially since these organisations have frequently changed their approach in an ad hoc manner, with limited transparency, and without a clear indication of the principles which inform the process or where it will end.

Twitter was one of the most vocal in its commitment to free speech principles. "Our general council [sic] and CEO like to say that we are the free speech wing of the free speech party" Twitter's UK general manager told a conference audience in 2012.[258] This is because "We have a fundamental belief" Evan Williams, co-founder of Twitter, told the BBC in 2010 "... that the open exchange of information has a positive impact on the world".[259]

Yet it has found its fundamentalist approach to free speech challenged by countries, by corporations and by individuals. In France and Germany, for example, publication of pro-Nazi content is illegal. In response, rather than remove such content globally, Twitter started filtering content geographically in 2010.[260]

Then, in February 2015, the chief executive Dick Costolo made a frank admission. 'We suck at dealing with abuse and trolls on the platform and we've sucked at it for years' he wrote in an internal memorandum. 'We're going to start kicking these people off right and left and making sure that when they issue their ridiculous attacks, nobody hears them'.[261]

This mea culpa, four months before Costolo stepped down as CEO, came after years of criticism of Twitter for not adequately dealing with threats, harassment, stalking, incitement to suicide, and other forms of abuse on the micro-blogging platform. Much of this abuse was directed at women and, according to Costolo, was causing people to leave Twitter.

Following its chief executive's admission, Twitter introduced new tools for users and opened a Safety Center in July 2015.[262] It is not clear, however, if Twitter was 'kicking these people off right and left' as Costolo said they would. To that point Twitter had not release detailed information about who had, or had not, been removed. The evidence to date had largely been collected by organisations outside Twitter, such as the Brookings project. Brookings conducted a study on Twitter accounts that were using the platform to disseminate ISIS propaganda and messaging. From this we know that from September through December 2014 'at least 46,000 Twitter accounts were used by ISIS supporters'. Of these 'A minimum of 1,000 ISIS-supporting accounts were suspended between September and December 2014, and we saw evidence of potentially thousands more.'[263]

We also know that Twitter's new rigour went beyond radical extremists. In May 2015 it blocked a US non-profit service that captured the deleted tweets of politicians (see section on holding power to account). We know this not because Twitter announced it, but because the Sunlight Foundation, which ran the service, told its users.[264] It unblocked the service at the end of 2015.

As a commercial company, and one that has struggled to find a sustainable business model, Twitter is free to change its rules and its policies as it chooses. 'It is not our role to be any sort of arbiter of global speech', Twitter's General Counsel wrote in *The Washington Post* in April 2015.[265] Yet, as the service becomes integral to the communication of news and information, the civic implications of its changes increase. As long ago as 2009 Twitter suspended maintenance of its service to ensure its continued use as a communication tool in Iran during the elections.[266]

Twitter may be the clearest example of a digital intermediary that has had to adapt its approach to free expression since it started, but many others have followed a similar path.

Facebook has always had a more controlled environment than Twitter. This was partly driven by its aim to be a social utility, as useful and accessible for 13-year-olds as for 70-year-olds. 'As the product [Facebook] was developed for the U.S. market, it is designed to be safe for any 13-year-old in the U.S... making all Facebook users the moral equivalents of 13-year-old American teenagers'.[267] Facebook's 'Community standards' indicate what its users are, and are not, allowed to publish and share.[268] Although within these there is an 'extraordinary level of discretion left to the Facebook content regulators'.[269] In 2015 it added more detail on content that it allows or bans on the platform.[270]

Apple has always exercised discretion over the services it offers via iTunes and other Apple platforms. The company has emphasised the need to filter for quality control and security purposes, though there have been examples where other criteria appear to have been applied. An app called 'Drones+', that tracked US drone strikes, was rejected three times for three different reasons.[271]

Commercial pressure has also led to the removal of voices and content from the services of digital intermediaries. Legislation like the Digital Millennium Copyright Act (DMCA) in the U.S. and the E-Commerce Directive (Directive 2000/31/ EC) provide a framework in which the digital intermediaries are required to remove content at the request of rights-holders.[272] 'Thus forms one type of Internet-based regulatory mechanism that can be explained through regulatory capitalism' Benjamin Farrand writes, 'Legislation is passed that imposes a regulatory role upon the providers of information hosting services, in exchange for immunity from suit so long as that regulation is performed'.[273]

Data protection law in Europe has also forced information intermediaries to review their approach to free expression. In 2014 the European Court ruled that individuals had the right to ask search engines to remove links that led to content which contained personal information about them if that information was 'inaccurate, inadequate, irrelevant or excessive'. The ruling was based on the 1995 Data Protection Directive. Referred to as the 'right to be forgotten', though perhaps better described as the right-to-be-obscured, the ruling meant that search engines had an obligation to institute systems that enabled people to make link-removal requests (see Case C-131/12, Google vs Mario Costeja Gonzalez, May 13 2014). Due to its dominance in search, the ruling fell disproportionately onto Google.

As a consequence Google instituted procedures and hired personnel to allow people to make removal requests, and to enable it to judge whether it would accept or reject them. A year after the European Court ruling Google said they had received over 250,000 data removal requests related to nearly a million URLs.[274]

Democratic governments and politicians have likewise exerted pressure on information intermediaries to restrict free expression. Amazon dropped Wikileaks' diplomatic cables from its cloud servers shortly after it was contacted by the office of the chair of the Senate homeland committee, though Amazon denied this was as a consequence of political pressure.[275]

Over the last decade the large information intermediaries have become enormously powerful in giving people a voice. In a single day in August 2015 over a billion people were active on Facebook. Yet over the same period they have also grown increasingly likely to take that voice away. They have often done this in response to cultural, commercial, and political challenges, and often for entirely comprehensible and defensible reasons. Yet many changes have also been made in an ad hoc and opaque manner that makes it difficult to evaluate their impact.

These ad hoc responses were inevitable given that these organisations in many cases deliberately chose not have systems by which to make editorial choices. 'A senior executive of a social platform admitted to me recently' Emily Bell, director of the Tow Center said in 2014, 'that they knew editing their platform for problematic content was a persistent and growing problem, 'but we have no system for it', he said, 'We scramble a small group into a war room and make decisions on an ad hoc basis. We know it is a problem'.[276]

Even when they have instituted systems these have been criticised for not being transparent. 80 internet scholars wrote an open letter to Google in May 2015 saying that the 'The vast majority of these [Google's] decisions face no public scrutiny, though they shape public discourse' and arguing that the 'implementation of the [right to be forgotten] ruling should be much more transparent'.[277] In response to pressure from governments, Google, Facebook, Microsoft and others joined the Global Network Initiative (GNI). The GNI aims 'to advance the freedom of expression and privacy rights of Internet users worldwide' by providing companies with a framework for how to consider these issues and making them commit to an assessment of their adherence to GNI's principles (from globalnetworkiniative.org). Yet it is unclear how much practical effect GNI will have or whether the participation of the tech companies is symbolic or material.[278]

As US commercial corporations it is the digital intermediaries' prerogative to make their own rules and decide how to deal with people and the content they publish. As private companies they are not subject to the requirements of the First Amendment. However, since they have reached such a size, reach and dominance, this puts them in positions of immense power with regard to the future of free expression. For this reason people have argued that Google executives 'exercise far more power over speech than does the [US] Supreme Court'.[279]

Democratic publics, and their governments, have to consider at what stage this becomes problematic. Now these organisations can give people a voice they can also take it away and, as commercial organizations, they do not need to say why. Given the dominance of these services, going to another service is often not a viable option. If these organisations choose to withdraw someone's right to express themselves on their platform, should they be required to make that transparent? Should people have an opportunity to challenge these organizations' commitment to free expression? When does our reliance on these platforms as a means of expression become too great? Do democratic societies have an obligation to ensure more devolved, decentralized, public spaces?

5. The Power to Influence People's Vote

In the lead up to the UK Election in May 2015 Facebook kept track of the level of engagement of its UK users with political parties and issues. Based on this engagement it found that, of the total engagement with the two main parties, the Conservatives received 55.7 per cent (12.2m interactions), and Labour 44.3 per cent (9.7m interactions). This was, as Mark Shephard has pointed out, 'within plus or minus one per cent of the actual ratio of vote share for the two main parties' and, if combined with seat share 'it was arguably a better predictor than many predictions derived from opinion polls.[280]

We do not know whether Facebook has found similar correlations in other elections – but the numbers are closer to the actual result than the predictions of the UK polling companies. When asked, for this study, Facebook did not comment on the value of using interactions as a predictor. At the least, it illustrates how closely Facebook is tracking the political interactions of its users in the lead up to an election.

There has long been recognition of the power of traditional media to influence the outcome of elections. Yet some are now starting to look at the power of the new digital intermediaries in predicting and potentially influencing the outcome. Indeed some are now claiming that the digital intermediaries could have a profound effect on elections in at least three ways: by effecting voter turnout; by influencing the information people are exposed to about an individual candidate or party (either deliberately or via the algorithmic 'filter bubble' effect); or by enabling the microtargeting of specific individuals with particular views in precise locations.

The first influence, about effecting voter turnout, was illustrated by a study by Facebook itself. 'A 61-million-person experiment in social influence and political mobilization' found that 'political mobilization messages', in this case prompts on people's Facebook profiles, could spur people to vote.[281] Others, including Jonathan Zittrain, then showed that, should this prompt only be shown to supporters of one party, it could be enough to swing the result.[282]

The second influence on voting, regarding the information people are exposed to about an individual candidate or party, was raised by two academics in research published in 2015. Robert Epstein and Ronald E. Robertson reported on experiments that tested whether the results displayed about a political candidate by a search engine, and the order in which they were displayed, could be manipulated in order to affect people's voting preferences.[283] Based on their experiments they found that 'biased search rankings can shift the voting preferences of undecided voters by 20 per cent or more' and 'the shift can be much higher in some demographic groups'.[284]

Google strongly rejected the study's findings. 'There is absolutely no truth to Epstein's hypothesis that Google could work secretly to influence election outcomes', Amit Singhal, head of Google search, wrote on Politico.com. 'Just as any electoral system must be trusted to be considered valid, so too must our search results'.[285] This was similar to Google's response to Epstein two years earlier, when Google responded, that it would not be in its interests to manipulate search results: 'Providing relevant answers has been the cornerstone of Google's approach to search from the very beginning'.

Yet, even if one accepts Google's response, this does not protect against the filter bubble problem. In other words, that the search results might be distorted because of an individual's search history (Google Tailored Search), or by the searches of many people. This can lead, Epstein argues, to a 'digital bandwagon effect' in which, 'as more people get election-related information through the Internet... algorithms have perhaps been having a say in selecting our leaders'.[286]

Moreover, given that search engines are, according to the January 2015 Edelman Trust Barometer, more trusted than news organisations, there is good reason to believe that people would be as - if not more - influenced by the results they find when they key a candidate's name into search as by content published by a traditional news organisation.[287]

The third aspect of influence relates to the potential to microtarget specific individuals, with particular views, in precise locations. By cross-correlation of data, combined with qualitative research, it is now possible to identify, with a high degree of accuracy, undecided or swing voters in marginal political districts and the messages that are likely to have most impact on them. Using this information one could target, for example, men between 50 and 60 living in a particular area who are anxious about immigration and welfare. This type of targeting is what the Conservatives were doing, with the help of Jim Messina, in the lead up to the May 2015 General Election.

> "We were having as many as eight to ten conversations with undecided voters in the final week," Jim Messina, a campaign strategy advisor for the Conservatives said, "while Labour was still, in the final week, mailing every single person in the constituency. And that just didn't make sense."[288]

Facebook was key to this strategy, according to Messina, particularly in finding specific people in marginal constituencies:

> "We went in and took very deep dives in the seats and to see what was do-able, what was winnable . . . who were the voters, who were potential waverers, thinking about leaving the Lib Dems; who were the voters trying to decide between us and Labour; and who were the voters considering leaving us for Ukip — and we were able to have very focused messages to all of those people."

Messina was convinced it worked: "I think the proof is in the pudding that we now hold every single west UK Lib Dem seat."[289]

It is almost impossible to test Messina's claims since the campaign was conducted privately and Facebook does not release its data. Though it is clear that, from Messina's perspective, microtargeting through social media tech giants like Facebook, is a critical and increasingly integral part of modern election campaigning, and central to identifying and influencing swing voters. In this way it is different from, supplementary to, and more powerful than the role played by the local newspaper, or television advertisement.

Yet, unlike broadcast campaign communication in the UK and many other democracies, there are no rules surrounding the use of social media or arrangements made with the tech giants. At the same time it is extremely hard to monitor or analyse the use of social media platforms like Facebook for microtargeting since their use is private and the data held by the companies themselves. This opacity may make them more powerful. As Steven Lukes wrote in his seminal book, 'power is at its most effective when least observable'.[290] Similarly with search engines, the increasing tailoring of search results will make it 'difficult or impossible for regulators to detect a manipulation.'[291]

This is making existing legislation and regulation around elections seem outdated and inconsequential. How, for example, is it possible to track campaign spending per constituency across social and search platforms? Given the lack of transparency of communication via certain social media platforms, how is it possible to monitor the accuracy of party communication? Should information intermediaries make commitments, prior to an election, that they will not discriminate who they prompt to vote? Should these organisations have to make public the relationships with different political parties and what these involve? Or perhaps these organisations should have positive responsibilities to provide people with information about candidates?

6. The power to hold power to account

Local newspapers across many western democracies have struggled economically for well over a decade.[292] This is, in part, due to structural changes that make it difficult to support local news businesses as in the twentieth century. This has led to a decline in the number of professional local journalists in western democratic countries, particularly those reporting issues of public interest.[293] A failure to report from local councils, from public meetings and on public authorities has sparked anxiety about the accountability of these public bodies and the services they provide.[294]

Information intermediaries believe they represent part of the answer. The access to information they provide and the tools to interrogate enable, they say, a new type of accountability through transparency. As the Executive Chairman of Alphabet, Eric Schmidt, writes: 'A shopkeeper in Addis Ababa and a precocious teenager in San Salvador will be able to disseminate information about bribes and corruption, report election irregularities and generally hold they governments to account'.[295]

Facebook believes something similar, including in its SEC filing statement for its IPO in 2012: 'We believe building tools to help people share can bring a more honest and transparent dialogue around government that could lead to more direct empowerment of people, more accountability for officials and better solutions to some of the biggest problems of our time'.[296]

This concept, of a 'Fifth Estate' that could provide a complement or alternative to the Fourth Estate, was proposed by the Oxford Internet Institute's Bill Dutton in relation to the internet back in 2007. A 'new form of social accountability is emerging' he said in his inaugural lecture, 'what I am calling the 'Fifth Estate' ... I will argue that this could be as important – if not more so – to the 21st century as the Fourth Estate has been since the 18th'.[297]

There are already numerous examples of public figures exposed or chastened on these digital platforms. Mitt Romney was caught on film published on YouTube before the 2012 election talking about the 47 per cent of Americans it was his job 'not to worry about'. John Galliano's anti-semitic comments at a café in Paris were filmed by a contributor to Citizenside and published online.[298] Emily Thornberry, a Labour politician, resigned from the shadow Cabinet after she tweeted a misjudged comment about a Union Jack draped house in Rochester.[299]

These services have also provided the platform to distribute videos of human rights abuses. Recognizing the need to curate and verify these videos, in 2012 YouTube launched a Human Rights Channel, working with Witness and Storyful.[300] By 2015 YouTube claimed to have 'become a primary home for this powerful, first-person documentary footage' and announced a daily YouTube Newswire, a joint-venture Witness Media Lab to 'focus on human rights struggles as seen from the perspective of those who live, witness, and experience them', and a 'First Draft Coalition' of experts to provide tools and advice on verification and security.[301]

YouTube may be the primary platform for eyewitness human rights videos, but many are also documented on Twitter, Facebook and other platforms. Madeleine Bair, who leads the Media Witness Lab, notes that video of a fatal police shooting in Los Angeles in March 2015 was first uploaded onto Facebook.[302]

From a civic perspective this is a positive and powerful new development. The opportunity for people to hold authorities, corporations and public figures to account with only a smartphone and an internet link is potent and compelling.

Yet it is unclear the extent to which, beyond Google, these organisations either acknowledge or accept the risks and responsibilities that accompany their role as platforms for the publication and distribution of videos documenting human rights abuses or holding public authorities to account. The fatal police shooting video in Los Angeles, for example, was subsequently 'removed from the pages of Facebook users who had shared it – without any explanation'.[303]

Enabling the publication and distribution of these videos puts significant civic responsibility in the hands of these organisations. It is within their power to remove them – with or without explanation. They can curate and verify them, as YouTube has done on the Human Rights Channel, working with Storyful and Witness, or simply host them. They can anonymise parts of the content and the publisher, or make the identities of the participants and publishers transparent.

Witness has argued the case for 'visual anonymisation' of some of those filmed within these videos, to prevent protestors being identified and targeted by governments and security services.[304] The Electronic Frontier Foundation (EFF) found examples of the US government using social networking services for investigations.[305]

As easily as they can enable people to hold public authorities to account, it is also in their power to take it away. Twitter chose to remove a service that captured embarrassing tweets that were deleted by politicians. 'Politwoops' was a service provided by the non-profit Sunlight Foundation that ran from 2012 to 2015. In May 2015 Twitter abruptly blocked Politwoops, indicating that it breached its terms of service.[306] Seven months later Twitter announced it was reversing its previous decision.[307]

Conversely, once certain platforms become dominant it becomes easier for public figures and authorities to reduce or suppress their effectiveness. 'Virtually any needle can be "disappeared" into a haystack of that size', Frank Pasquale writes of Google's index, 'it is just too easy for the company to hide content it would rather we didn't see.'[308] Jon Ronson writes about the hundreds of thousands of dollars clients of reputation services pay in order to obscure search results.[309] 'One of the most notable areas of growth [in PR]' John Lloyd and Laura Toogood write in their study of 'News Media and Public Relations in the Digital Age', 'is reputation management.'[310]

Moreover, once these tools become dominant, they can more easily be used to make accountable the non-powerful rather than the reverse. Texas student Monica Foy was 'held accountable' by Twitter users for her offhand tweet about the shooting of a police officer. Following her tweet she was arrested (not for the tweet but for an earlier misdemeanor) and received numerous death threats.[311] Lindsey Stone, who worked for residence for people with learning difficulties, was 'held accountable' for photos she posted on Facebook showing her mocking public signs and statues. The

outraged reaction led to Stone losing her job, falling into depression and hardly leaving her house for almost a year afterwards. She had believed the photos were private.[312]

Equally, though these platforms may aid transparency they do not ensure it, and though they may help accountability of public authorities, they do not motivate or sustain it. When David Cameron first became Prime Minister in the UK in 2010 he promised to 'extend transparency as far and as wide as possible'.[313] The UK government's hope was that 'an army of armchair auditors' would help 'bring about a revolution in town hall openness and accountability'.[314] Three years later no such army had yet emerged.[315] In 2014 the UK Public Administration Commission (PAC) concluded that 'Simply putting data "out there" is not enough to keep Government accountable'.[316]

There are also limits to those one can hold accountable using these tools. Google, Facebook, Apple and Amazon are often accused of being overly secretive (though this is a charge levelled at many large corporations).[317] However, in their case, there are reasons why a news organisation might be more reluctant to scrutinize them. Many news organisations have commercial relationships with the platforms (for example via Instant Articles), and many rely on them for advertising. More significantly, since they increasingly depend on them for distribution of their news, they may be wary that – should they critique them – it could affect their visibility on those platforms.

It is similarly important to note that these tech organisations, while they may like the concept of a Fifth Estate, do not define themselves in the same way as the existing Fourth Estate. Most importantly, their sense of identity is not inextricably linked to their independence from the State, as in the case of traditional journalism organisations. To date, most of them do not appear to believe that, to serve their purpose, they must remain separate, in conflict even, with government (though this may be changing since the Snowden revelations). If they do not consciously distinguish themselves from government, they will necessarily undermine their capacity to act as a new Fourth Estate. Worse, they will risk becoming a Fifth Column – collaborating with the State rather than holding it accountable. This helps to explain some of the concern about Amazon's decision to drop Wikileaks from its servers.

The information leaked by Edward Snowden in 2013 appeared to reveal that many of these large information intermediaries were secretly passing on user information to the US government under the PRISM programme (established in 2007). After PRISM became known a number of the companies became more transparent about the number of user information requests they receive from the US government under the Foreign Intelligence Surveillance Act or FISA (see, for example, the Google Transparency Report). The intermediaries strongly denied that they have provided 'back doors' by which the US government could access their servers, and complained that they were compelled by law to keep the FISA requests secret.

Yet, in many instances, these corporations work directly with government, on issues like cybersecurity and crime prediction. There is nothing to suggest that these collaborations allow for access to any personal data, though they do require close working relationships between government and tech providers that many traditional media organisations may find uncomfortable. Microsoft, for example, has Government Security Program 'agreements with over 40 agencies from more than 25 governments worldwide'. This includes an agreement with NATO's cybersecurity wing.[318]

Certain information intermediaries market their closeness to government as a mark of their trustworthiness: 'Throughout our history, Microsoft has helped governments build and deploy more secure IT infrastructure and services to protect their citizens and national economies.'[319] Whilst this may enhance their corporate stature in the eyes of governments and other corporations, it compromises their capacity to take on the mantle of the Fourth Estate.

There are numerous questions raised by this. Who guards the guardians and holds these tech organisations to account? How can we be sure of their independence from government when they do not define themselves in these terms? How can tech companies reassure people that they will put the public interest over corporate or state interests when it comes to publication? Can a new Fifth Estate supplement and support the Fourth Estate in holding power to account, or will it simply displace it?

4 | A question of trust

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The services provided by these organisations have transformed our lives. Most of us still view these tools simply as ways in which to make our lives easier, to communicate more effectively, to shop more conveniently. They are also transforming how we pay for things, how we monitor our health, and how we travel. Yet, in addition, they are serving civic purposes that are important to the functioning of our political and social lives. This study has shown that these organisations are performing at least six important civic functions: commanding public attention, communicating news, enabling the co-ordination of collective action, giving people a voice, influencing people's vote, and helping hold power to account.

When set out in this way these functions appear remarkably similar to those we normally associate with the Fourth Estate. To date this has rarely been recognized or acknowledged. If we are to understand how these functions are evolving and what the implications are then it ought to be made more explicit. The tech giants and their tools are indeed taking on many of these roles, though performing them in a different way, doing them less self-consciously, and interpreting their responsibilities differently.

In acquiring these functions the tech giants have also acquired power. Some of this power has shifted from old media, such as the power to communicate news. Some of the power is new – in form if not in purpose – such as enabling co-ordinated collective action. This power brings with it huge potential to be a positive and constructive force, as well as power to be negative or destructive.

The degree to which they serve these purposes will almost certainly increase – the more they know, the more people they serve, the more useful their services can potentially be. At the same time it will become more difficult for smaller organisations to compete on an equivalent basis, lacking the networks, the intelligence and the scale. These organisations have reached such a size that the market will not act as a corrective on its own. Lacking equivalent options, democratic governments and publics will rely on them still further.

Yet just as these organisations can provide civic functions, so they can choose not to provide them. It is their choice. After terrorists shot and killed 130 people in Paris on 13 November 2015 Facebook activated its Safety Check service. Thanks to the service many people were able to find out if members of their family or their friends were safe and to locate them. This was the first time the service had been active after a terrorist attack, previously it had only been turned on following natural disasters.[320] Why, people asked after Paris, did Facebook not start it following other similar tragedies, like the ISIS bombings in Beirut the previous week? Facebook responded, saying that they would change their policy and activate the service 'for other serious and tragic incidents in the future'. In each case it will, of course, be Facebook's decision whether to turn it on or not to turn it on. This, as Zeynep Tufekci writes 'demonstrates the profoundly political nature of the choices made by major internet platforms.'[321] It also demonstrates the significant power these platforms have.

As our societies become increasingly digital and 'smart' we may find ourselves relying on these organisations for our infrastructure in addition to their civic roles.

This raises still further questions as to our dependence on them, as Evgeny Morozov writes:

> 'the issue of whether we want a company like Google that already has access to an enormous reservoir of personal information to continue its expansion and become the default provider of infrastructure—in health, education and everything else—for the twenty-first century'[322]

At the very least, democratic societies need to explore the dangers of such dependence. If a service collapses or becomes unavailable, do we do without it until the market comes up with an alternative? If certain organisations offer their services in exchange for personal information, are we comfortable that it is a fair exchange? Should our public sphere become increasingly atomized and disconnected, should we try to create new, shared digital public spaces? Are we concerned about the privatisation of public goods?

> 'In our dependence,' Rebecca MacKinnon writes, 'we have a problem: we understand how power works in the physical world, but we do not yet have a clear understanding of how power works in the digital realm.'[323]

In his landmark book *The Master Switch*, Tim Wu shows how various information and communication empires have gone through a series of cycles in their history. From an open, highly inventive and slightly chaotic phase towards a more closed phase characterized by industry consolidation, often with the support of government. This is then followed by a third, disruptive phase driven by technological change or by government led break-up (for example in the form of antitrust).[324]

On this basis, with respect to the internet, we appear to be moving into the second phase, in which a small number of large corporations dominate, and where governments seek ways with which to contain, direct or collaborate with those corporations. Organisations cannot reach this scale and size, and accumulate this much power without provoking a response - from national and regional governments, from other industries, and from the public.

Indeed governments have already responded, and found ways in which to collaborate with these companies, as we learnt from the materials leaked by Edward Snowden in 2013. Yet this type of collaboration, of democratic states working closely with corporations that have such detailed knowledge of the minutiae of our political and social lives, raises a rather frightening prospect that neither George Orwell or Aldous Huxley fully imagined. A world in which governments have access to all our digital information and communication, and therefore almost complete knowledge of who we are, who we communicate with, and how we engage with politics – not only via their own systems but via those run by the information intermediaries. In addition to which, by outsourcing its means of surveillance and control there are few democratic mechanisms of transparency or accountability, with many citizens blithely unaware it is even happening: Orwell's *1984* meets Huxley's *Brave New World*.

What about the tech organisations themselves? How should they respond? To what extent should they acknowledge their growing civic roles and take greater

responsibility for them? Should they be investing in news? How should their governance make them more accountable for their civic roles? How can they make themselves more responsible to those who rely on their services? Right now the public has little say in how they use their power, or adapt it, or evolve it; nor are the public aware of the values to which they ascribe. This would be of less importance if these organisations were not so dominant in the digital world.

Partly, this comes down to a question of trust. These organisations would like people and governments to trust them. 'Google depends for its continued success on users and governments that trust it will not abuse this knowledge.'[325] President of Alphabet, Sergey Brin, agrees: 'We wouldn't survive if people didn't trust us' he told the audience at the Code Conference 2014.[326] Much of this trust derives from the individuals that lead the organisations – from Sergey and Larry, from Mark and Jeff. Eric Schmidt, executive Chairman of Alphabet reinforced this when he told a reporter – "Evil is what Sergey [Brin] says is evil."[327]

Yet placing such a degree of trust in an individual, Shoshana Zuboff writes, may be seen as 'the quintessence of absolutism.'[328] It is also highly precarious. Google's 2014 capitalization Annual Report acknowledged this explicitly by noting that 'The loss of key personnel could seriously harm our business', in particular 'Larry Page and Sergey Brin are critical to the overall management of Google and the development of our technology'. Neither is it helped by the opaqueness of most of these firms. The academic and journalist John Naughton has noted how Google and Facebook are 'pathologically secretive about their long-term aspirations and strategies' and likens reporting on them to Kremlinology during the Cold War.[329]

Our trust has also taken a knock in recent years. The files released by Edward Snowden in 2013 appeared to show that many of the tech giants had been collaborating – willingly or unwillingly – with the US government. The firms themselves denied such collaboration.

Eventually, inevitably, trust in these organisations will not be enough. Trust will erode and dissipate. As commercial companies these organisations will seek to maintain profits and shareholder returns. This will lead them to do some things that citizens do not like or are uncomfortable with – particularly as regards civic role and responsibilities. In order to increase revenues, for example, they are likely to seek to gain more financially from their knowledge about individuals. They will make decisions about what should command public attention about which people will disagree. They may share information with governments, political parties or authorities that is then used in a repressive or exploitative way. Their dominance will mean some of these actions have significant implications, but there will be little that citizens can do about them. Once trust erodes, or is undermined, what next?

5 | How should democracies respond?

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> 'I do not divide monopolies in private hands into good monopolies and bad monopolies. There is no good monopoly in private hands. There can be no good monopoly in private hands until the Almighty sends us angels to preside over the monopoly. There may be a despot who is better than another despot, but there is no good despotism'

William Jennings Bryan, speech, 1899, quoted in Hofstadter (2008)

The digital world is currently out of joint. A small number of tech companies are very large, dominant and growing. They have not just commercial influence, but an impact on our privacy, our freedom of expression, our security, and – as this study has shown – on our civic society. Even if they mean to have a positive and constructive societal impact – as they make clear they do – they are too big and have too great an influence to escape the attention of governments, democratic and non-democratic. Governments have already responded, and more will.

Most of these government responses are destined to fail. They are destined to fail for three reasons: they have not yet adequately defined the problem they are trying to solve; they are using tools that are not suited to dealing with these organisations and the services they provide; and they do not have a vision of where they would like digital society to end up.

On the first, the problem, this is generally defined narrowly in terms of privacy, security, and economics. Debates on privacy centre on the collection and use of personal data by the tech giants. Those on security focus on the extent to which governments should or should not have access to that personal data. Economic questions relate chiefly to tax and the degree to which the tech giants may be unfairly promoting their own services over those of their competitors.

The antitrust case launched by the European Commission against Google in April 2015, for example, centres on the extent to which Google was, or was not, using its position as an intermediary to promote its own shopping service over those of its competitors. The Commission claimed that Google had 'abused its dominant position in the markets for general internet search services in the European Economic Area (EEA) by systematically favouring its own comparison shopping product in its general search results pages.'[330] The Commission may, or may not, be able to show the tech giant biased its results to its own service, but it will much harder to demonstrate how this this hurt the end user, particularly given that the service is provided free at the point of use.

This is why, as this study has shown, the problem also needs to be framed in civic terms. It needs to be recognized that these organisations and their services are starting to play significant civic roles in democratic society, and that, in playing these roles, they are gaining political and social power. Democratic societies may decide, in some cases, that this is a fair trade given the benefits - though there has been precious little discussion to date as to the terms of trade and the advantages and disadvantages of reliance. In other cases, societies may decide the risks outweigh the benefits. They then need to figure out how to respond.

Working out how to respond will not be straightforward. The tools currently available to democratic governments – including legislation, regulation and taxation – are not well suited to dealing with the issues raised by the tech giants. These organisations are very large and transnational, often work to a different economic model to other corporations, and work in a communications environment that is fundamentally different from their predecessors. Until we better understand and communicate the dilemmas they raise, and until the public become concerned about the potential – or actual – threats they represent, it will be difficult to respond effectively.

In the nineteenth and early twentieth century, antitrust law was applied more successfully once the problem of 'bigness' – that the law was introduced to address – was more carefully investigated and exposed. In January 1903, for example, the first of Ida Tarbell's 'muckraking' investigations of John D. Rockefeller's Standard Oil was published in McClure's magazine. In this, and her following articles, Tarbell detailed how the rise to dominance of Standard Oil 'was aided at every stage by discriminatory railroad rates and illegal tactics – bribery, fraud, criminal underselling and intimidation.'[331] Such was the popular response to Tarbell's investigations that she was lauded as the 'Joan of Arc among moderns' and 'one of the most commanding figures in American letters.'[332] Her exposure of Standard Oil's history and practices helped Theodore Roosevelt steer his bills against trusts through Congress – on rail rebates, on the expedition of antitrust action, and on the establishment of a Department of Commerce with a Bureau of Corporations that had powers to investigate trusts. Eight years later, the US Supreme Court ruled that Standard Oil had abused its dominant position and should be broken up. It was the combination of the investigation, the exposure, and the public response that enabled political action to be taken. There has, as yet, been no twenty first century equivalent of Ida Tarbell's investigations into the tech giants.

Democratic societies also need a much clearer vision of where they would like to end up. What would a progressive digital future look like? How should plurality and diversity be defined in an age of information abundance? Should the digital civic landscape be devolved or centralized? These democratic objectives will need to include the needs of the citizen as well as the consumer, and of civic society as well as the security state.

Such a vision ought to be led by the public, and has to take account of the state of the digital environment over twenty-five years after the advent of the web. The vision is unlikely to include over reliance on a small cadre of transnational tech companies, but may well include the convenience and efficiency that comes from using one provider for certain services like general search. Without greater clarity on the potential consequences of digital dominance, and a clearer vision of where democratic societies would like to end up, there is a risk that they jeopardize the tremendous civic benefits of digital technology, and fail to build a digital ecosystem that enables civic participation while protecting citizen's rights.

Without devising progressive responses democratic societies will be left with two alternatives, neither of which is attractive. They can take a laissez-faire approach, accepting that the digital environment will be dominated by a handful of tech giants,

and that the most effective way of affecting their behaviour is through persuasion and collaboration. Or, they can react regressively to digital developments, banning services, imposing punishments and even prosecuting organisations and employees who run the tech companies' tools.

Democratic societies do not yet understand the phenomenon of the tech giants, what the phenomenon means in civic terms, what benefits it brings to governance, and the dangers inherent in it. Only once they understand the phenomenon better, and understand where it can help and where it can damage civic society, will they be in a position to work out how best to respond.

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